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Original Communications.

ARTICLE I.

ADDRESS delivered before the Chicago Gynæcological Society,
at the Annual Meeting, September 30, 1881, by DELASKIE
MILLER, M.D., President.

GENTLEMEN,—In obedience to the requirements of the rules which govern our society, I proceed to discharge one of the last duties devolving upon me for the current year.

In passing to the consideration of topics which I desire to present to you on this occasion, I do but reflect the sentiments of each member of the society, when I give expression to the feelings of sincere pleasure and devout thankfulness for the convalescence of one of our most esteemed brothers, who, more than a year ago, while in the enjoyment of robust health, and engaged in the active duties of the profession, was suddenly stricken down, and for a long time lay near the border line of the shadow land. We recall with pleasure the many virtues and the kindly disposition, the courteous bearing and the professional integrity which have ever characterized Dr. T. D. Fitch in his intercourse with

members of the profession. While we deeply sympathize with our brother in his severe trial, we at the same time desire to express our thankfulness for his recovery and prospective restoration to usefulness in society, and to the enjoyment of social and domestic happiness for many years to come.

With your permission, gentlemen, I will devote a portion of the time at my disposal, to some impressions of the International Medical Congress of 1881.

On several accounts this congress was a remarkable one. First, on account of the numbers in attendance, which were greater than at any similar meeting of the profession which was ever convened. Second, the delegates represented a broader extent of the earth's surface than any other, including, as it did, representatives from every country where medicine is cultivated as a science. And third, among these delegates, moreover, were a large proportion of physicians who had made more than a local reputation. There were many whose names will ever be associated with the real and lasting improvements in medical science and art, which have been so numerous and so important during the time of the present generation.

The interest of the congress was not diminished by the fact that it was held under the patronage of Her Majesty the Queen, whose interest in every movement calculated to improve the race, and ameliorate suffering, is so well known throughout the civilized world. The proceedings were opened by his Royal Highness the Prince of Wales in person. The address of H. R. H. was a genuine surprise to most of those who composed the vast audience, for its pertinency to the occasion, and the admirable manner of its delivery—the Prince proving himself not only familiar, but also in hearty sympathy with the objects of the congress.

The opening address by the President, Sir James Paget, was an admirable production—comprehensive in scope, elevated in tone and dignity, presenting the aims and usefulness of the profession in a manner that stimulated every heart in that august assemblage with feelings of a just pride in our philanthropic profession.

I am sure I hazard nothing in asserting, that no meeting of the profession was ever held, ever since the world began, that would

compare with this initial meeting of the Congress, in the effects produced upon the minds and emotions of the audience.

It would be inappropriate on this occasion to attempt, as it would be impossible to give even an epitome of the transactions of the different sections—fifteen in number—from personal observation. The proceedings will in due time be published, and will constitute a valuable addition to the medical literature of the current year.

To the section of obstetrics, Prof. Tarnier exhibited his latest improved obstetric forceps, modified in form from that first invented; he having found the instrument in its original form difficult to apply in certain positions of the head, and inefficient in action, except under favorable conditions. He claims for the instrument in its present form (minus the perineal curve), certain advantages over the ordinary double-curved forceps, which may be summarized as follows, viz.:

- 1st. Greater facility of application in certain difficult cases.
- 2d. A firmer grasp of the head.
- 3d. Permitting the movements of the head to take place in its passage through the pelvis, without the guiding aid of the accoucheur.
- 4th. Simplifying the application of force in extraction.
- 5th. That it is constructed on scientific principles.

Several eminent obstetricians commended the instrument as an improvement over the ordinary forceps. However, if I am not mistaken, the sentiment of the section, as expressed in the discussion, was decidedly averse to the claims of Prof. Tarnier. For it was contended, on the other hand, that even if the instrument of Prof. Tarnier was constructed on scientific principles, it was still imperfect, and liable to do injury in its use. It was asserted that greater difficulties would be encountered in its application than in the use of the ordinary forceps. Notwithstanding its vise-like grasp of the head, which is liable to injure by its continuous pressure, it is quite as liable to slip as the ordinary instrument. Loosening of the blades and relief of pressure at short intervals, are essential in forceps delivery. And again, the force in extraction should always be directed by the intelligence of the operator, as its direction should vary constantly as the head

passes through the pelvis, and this change of direction is appreciable only by the information derived from the muscular sense while operating.

The subject of oöphorectomy was presented in two papers. One by the gentleman whose name has become synonymous with the operation—Battey's operation.

In the first paper, the object of the operation was claimed to be "The Artificial Induction of the Change of Life." This was assumed to be the pivotal principle that should govern the surgeon in determining the propriety of the operation in any given case.

It was asserted in the second paper, and confirmed in a statement of one gentleman in the discussion which followed, that menstruation sometimes continued after the operation had been performed. To explain this anomaly, one speaker claimed that menstruation was due, not to ovarian excitement, but to the influence of the Fallopian tubes! Are we justified, then, in accepting the philosophy upon which the operation is based if the function peculiar to the sex may continue unmodified after the operation?

It was claimed, moreover, by the advocates of the operation, that it was a remedy for insanity, for in two cases adduced, the patients became sane after the operation, and one gentleman suggested that this operation was destined to become recognized in state medicine, and that insane women should be subjected to the operation, to preclude the possibility of reproduction! On the other hand, however, cases were cited in which the patient became insane after the operation had been performed, in whom no symptoms of insanity had appeared before.

By some who professed to have had much experience, the operation was considered a curative means in severe hæmorrhage from myoma of the uterus. In the neuroses the result of the operation had been less satisfactory than in some other cases. The table of cases operated upon for this complication (hæmorrhage), which was circulated in the section, showed a mortality far greater than has ever occurred from the disease in the practice of any single physician who has treated such cases on the recognized principles applicable in such complications.

The operation was claimed by some who took part in the dis-

cussion, to be one of easy execution, even by the vagina, while another who had operated several times in this way, had relinquished this mode on account of its difficulty, and announced that hereafter he should operate by the supra pubic method. Again, one of the most distinguished ovariologists stated that the operation was far from simple or of easy execution, being, in his opinion, more difficult than ovariectomy; to which statement there seemed to be a general assent.

Again, it was more than hinted by some who had attained the highest eminence in the profession, that the operation had been resorted to with unjustifiable frequency, and not as a *dernier ressort*, as it always should be. All other means should be intelligently applied, and for a time sufficient to demonstrate their inefficiency, before deciding upon this operation. A practical hint of importance is contained in the fact, that in many cases in which the operation has been recommended, the evidence of great suffering is derived from the statement of the patient herself, and is mental or emotional, having no direct dependence upon the sexual organs.

Much difference of opinion was expressed upon the fatality of this surgical procedure. While the statistics presented by the author of the operation indicated a mortality as high as 18 per cent., it was claimed by others that the mortality should not exceed two, or at most, three per cent.

The conclusion reached by a majority of the section undoubtedly was, that the sphere of oöphorectomy and the indications for the operation, were not yet definitely settled.

Great interest was manifested in the subject. The best men in the profession participated in the discussion, with an apparent candor and freedom from prejudice that did honor to the character of the profession and this important section of the congress.

The papers upon the various subjects were grouped, so that all upon the same topic were presented consecutively. Thus upon displacements of the uterus and their treatment, several essays were read. For the most part the authors assumed that the consequences were due mainly to mechanical disturbances, or at least they would justify this inference; for the one prominent idea appeared to be, that in the management of these cases, the mechan-

ical reposition and retention of the organ was the one great indication. Two criticisms might be advanced upon these productions, viz.: 1st. It is assuming too much to affirm that in cases where displacement of the uterus is detected, that the symptoms and sufferings of the patient are invariably due alone to the dislocation of the organ. It is in accordance with the experience of every practitioner, that displacements are sometimes detected unexpectedly, and have only an incidental connection with the ailment for which treatment is sought. 2d. While mechanical treatment may be required, this alone will fill but imperfectly the indications of the case. These patients are, as a rule, anæmic. The functions of excretion and elimination are imperfectly performed, digestion and assimilation are perverted, and neurasthenia results. The manifest indications are, while we restore the organ to its normal position, we should adopt measures to remove local congestion and inflammation by suitable topical applications. We should excite the secretions and eliminate the effete materials from the system. We should improve digestion and assimilation, increase the quantity of a good quality of blood, and thus improve the tone of the tissues, without which all treatment will be nugatory.

The papers, and the discussion upon the operation for the partial or complete extirpation of the uterus, seemed to possess a peculiar fascination, occupying much time and exciting great interest. The gentlemen who took part in the discussion, however, were not always those who had enjoyed the best opportunities for observation. The *nonchalance* of the speakers would lead one to suppose that the operation was but slightly, if at all graver, than the extirpation of the tonsils. Could the sex, who are not themselves responsible for possessing this much-offending organ, hear but a tithe of the talk of removing it, I am sure they would regret, to their latest hour, the fate that had made them subject to such mutilation. Carcinoma was the disease for which this operation was recommended. The last speaker in the discussion closed by affirming that however early, well and thoroughly the extirpation might be performed, the patient, though she survived the operation, would surely die of

the disease; to which sentiment there seemed to be a general assent.

One paper carried me back to the time of my earliest reading upon gynæcological subjects. It assumed that instead of laceration of the cervix uteri being the *fons et origo* of all uterine diseases, inflammation, with its consequences, ulceration, induration, *et omni genus* was the real pathology and the important condition to recognize, in the treatment of women, and that not a plastic operation, but local medication to remove these conditions, was the indication. Do the wheels of progress roll backward?

Two elaborate papers were presented upon post-partum hæmorrhage, which, after giving the causes and describing the conditions of this complication of labor, were devoted mainly to the management of this accident. The main reliance of one author in extreme cases (not new by the way) was the injection of a solution of perchloride of iron into the cavity of the uterus. This suggestion did not meet with the unchallenged approval of the section. In the discussion that followed, the great dangers liable to follow this mode of treatment were not ignored.

I was not a little surprised that the authors of these papers did not make more emphatic reference to two important means of management in sudden and great loss of blood after delivery, viz.: 1st. Direct pressure with the hand upon the site of the detached placenta, assisted by counter-pressure from without, sufficient to compress the uterus into a small compass, and down to the brim of the pelvis; and 2d, the importance of position, which can be utilized without interfering with other means in the least by raising the foot of the bed, so that, if need be, the body of the patient will form with the horizon an angle of 45°. This will secure the circulation of the little remaining blood in the system between the heart and brain, and thus bridge over the impending chasm of death, just ready to receive the patient.

But I would weary you, were I to follow this review further. It should not be inferred from the preceding, that no important or useful additions to the sum of our knowledge were made at the congress. I would by no means intimate that this was the case. On the contrary, it will only be necessary to remind you, gentlemen,

that many of the best-known members of the profession throughout the world were present,—physicians who had made for themselves a world-wide reputation, and that they contributed their profoundest thoughts and the results of their large experience, thus adding to the interest of the meetings, and giving instruction to all who had the good fortune to be present.

Of the comparative interest or value of the work done in the different sections into which the congress was divided, it would be impossible to speak from personal observation. That irrelevant and crude remarks were occasionally made in the discussions is undoubtedly true; but these were not of sufficient frequency to give character to the proceedings of the meetings.

The addresses delivered at the general meetings were, without exception, full freighted with profoundest thought and advanced ideas sufficient to satisfy the exactions of the most inquiring minds of the day. That by Virchow was, as a plea for vivisection, classic; and when generally circulated, as it certainly should be, will exert a strong influence upon the popular mind now being arrayed against this practice for physiological and scientific ends. The following brief extracts are from the address. The animus of the objections are like the following:

“In the name of humanity, of morality, of religion, the suppression of experiment on animals is demanded. * * * The criterion is pain. Everything by which, in the way of experiment, pain is inflicted on the animal, is torture of animals, and so far immoral and contrary to religion.” * * * The Professor answers: “The evidence that moral earnestness is failing in modern medical circles, is nowhere afforded. The reproach that Christianity is imperiled by vivisection, is worthy of Abdera. The assertion that the medical youth are inevitably “brutalized” by dissection and vivisection, is, as usual, snatched from the air; and it is also a calumny that vivisection teachers have suffered injury to their morality.”

That by Professor Pasteur, on the germ theory, excited great interest. It was from the experiments of Pasteur that Lister drew the inspiration which led to the valuable antiseptic method. And Dr. Davaine declares, “that his labors upon charbon (splenic fever or malignant pustule) had been suggested by Pasteur’s

studies on butyric fermentation, and the vibron which is characteristic of it." In this address he gives the data of a further advance by utilizing these investigations, in the prevention of other transmissible diseases, promising to equal in importance that of vaccination as a preventive of variola.

The general address on surgery by Prof. Volkman, brought to view in clear light the recent improvements in his specialty. His own words shall give you an idea of his mode of treating his subject. "To-day we may say, with the deepest conviction, that the surgeon is responsible for every disturbance that occurs in a wound; that it is his fault if even the slightest reaction or redness is developed in it, or if an amputation is not healed by first intention. He must reproach himself severely if, after an operation, bagging of pus occurs, and especially if death occurs from pyæmia. He who cannot attain to this degree of perfection, may be converted from his former method of treatment to antiseptic methods like one who, having hitherto always prescribed senega for catarrh, now uses ipecacuanha. Of the storm that has swept over the fields of surgery during the past ten years he has not experienced a breath."

The masterly production of Huxley met to the fullest extent the highest expectations. In his sweeping survey of the progress of medicine from the earliest times to the present, it was possible to see, as with the natural eye, the dawn brightening into the effulgence of mid-day. Like some ship in mid-ocean surrounded by dense fogs which obscure the vision, so that the firmament, the horizon, and all objects, though near, are shut out from view, till the rays of the rising sun penetrate and dissipate the clouds, and render the atmosphere translucent, when every object is presented in distinct outline upon the "deep blue sea" even to the distant blending with the sky,—so the mists of ignorance and uncertainty, which have enveloped medicine and the race, have been gradually dissipated by the accumulated light of experiment and observation of the centuries. The Professor expressed the strongest confidence that medicine would ere long occupy a place with the exact sciences.

The social features of the congress added in no small degree to the interest of the occasion. The hospitality extended to the

delegates, both public and private, was on a scale of magnificence which it is difficult to imagine could be excelled. The cordiality of the reception, and the personal attentions, were so spontaneous and constant as to excite the highest gratification in every stranger in attendance upon the congress. Though taxed to a great degree by the unprecedented attendance, nevertheless English hospitality was fully equal to the emergency.

I now pass to other topics of much interest to us as obstetricians. The study and the practice of obstetrics and gynecology, at first view, appear to be distinct and independent departments of medicine. The difference, however, which in outward aspect are so marked, are in many respects apparent only. An interdependence and close relation exist in many, possibly in a majority, of the important cases which come under treatment. The complications and accidents of parturition, and the sequelæ of abortion, entail upon the sex many pathological conditions which are permanent, and cause great suffering and derangement of function. Nor is it stating the case too strongly to assert that these complications are for the most part avoidable. The inference that the accoucheur is largely responsible for much of the practice of the gynecologist, is one that I do not propose to defend or deny.

Every obstetrician must have seen some cases, it may be not a few, in which serious consequences have resulted from injudicious interference, or from the neglect to render timely assistance. Unfortunately "meddlesome midwifery" is not always confined to the practice of the uneducated midwife. Like errors will be followed by similar results, though committed by the stronger sex.

I feel justified in presenting some suggestions upon topics, which for a long time I have considered important, viz. : How to prevent some of the accidents of labor.

Of course but little more than general statement is all that the time at my disposal will permit. Nor do I deem it expedient in this presence to elaborate in detail the propositions which I may advance.

At the present time great importance is attached to laceration of the cervix uteri. I do not introduce the subject on this occa-

sion to discuss the pathological significance of this accident. Undoubtedly, however, minor cases of laceration have, not infrequently, been elevated into undue importance, and symptoms have been attributed to these slight cases which the history would not justify. Unfortunately this, like other important novel advances in medicine, has been carried to an extreme, which time, a more mature reflection, and careful observation will correct. My object is to consider some of the preventable causes of laceration of the cervix uteri.

This accident may result from the application of an undue amount of force, either natural or artificial, to the cervix, while the tissue of the os uteri is in a condition unfavorable for rapid dilatation. Who can doubt that the increasing frequency in the application of the obstetric forceps within the os uteri, is a cause of laceration of the cervix? To my mind, this practice, as a cause of the accident of which I am now speaking, is so undeniable as to require no argument to convince any. Demonstration could be adduced, not from experiment upon the cadaver only, but from observation of the effects upon the patient. I protest with emphasis against such use of the forceps, which has under the teaching of some, otherwise respectable authorities, become too general and too indiscriminate. Something should be left to the natural forces, in so important a function as parturition.

The undilatable os uteri may predispose to laceration of the cervix. Different conditions of the os may be met with, any one of which may constitute an important factor in retarding the process of dilatation; as irritability caused by the premature escape of the liquor amnii, rigidity from pre-existing disease, as chronic inflammation or hyperplasia. In such cases the contractions are liable to be violent. The indications to soften the tissue of the cervix, and to diminish the force of the contractions, can be fulfilled by applying emollients locally, and by the administration of sedatives, veratrum viride, morphia, chloroform, chloral, etc. By these means I am confident the dilatation has been facilitated, and laceration prevented. Again, not so infrequently as to be remarkable, have I met with cases of delay in the first stage of labor, from a cause which I suppose depended upon undue

attachment of the membranes to the cervix uteri. In a model labor, the maturity of the ovum will be evidenced by a loosening of the membranes; the contractions of the uterus draw the os and inferior portion of the cervix away from the inferior segment of the membranes, while at the same time the membranes, with the liquor amnii, protrude through the os. By these means the os yields and dilates. If, however, the attachment of the membranes is too strong for this easy separation, labor is delayed, rupture of the membranes takes place before the os is dilated, and finally laceration takes place.

When delay in dilatation is met with, the tissue of the os and cervix being normal, the separation of the membranes from the cervix by the finger will be followed by the natural progress of the labor. I join issue with the assumption that the cervix is necessarily ruptured in labor.

Vesico-vaginal fistula may undoubtedly result from the unskillful use of instruments. More frequently, I believe, this accident should be attributed to some mismanagement of labor, or neglect of the patient after delivery. During a prolonged second stage of labor, the bladder should be emptied by the catheter, if necessary, at short intervals. After delivery, in severe labor, neglect to introduce the catheter at proper intervals will subject the weakened coats of the bladder to distension, and laceration into the vagina may take place. When any suspicion exists that these tissues have been injured by severe or long continued pressure, the catheter should be introduced at short intervals, not so much for the relief of suffering, as to prevent the laceration that would be liable to take place in the contused and weakened tissue of the bladder and vagina if distension should be allowed.

It will occur to every gentleman present, that great delay in the second stage of labor should not be permitted. Skillful delivery would certainly protect many patients from the distressing accident under consideration.

Rupture of the perinæum may result, like laceration of the cervix, from sudden distension of the tissues involved. A rapid termination of the stage of expulsion is far from being desirable. Time should be allowed for the tissues to yield. The length of time required must be determined by the attendant in any given

case. But how gain time when the contractions are too violent for the safety of the perinæum? The effect of violent expulsive force may be lessened by directing the patient to cry out at the commencement of each contraction, and the advance of the presenting part should be retarded, as it can be by direct pressure. But what I believe to be more important in preventing rupture of the perinæum, is the judicious management of the head at the time of its expulsion, and this is accomplished when *extension* of the head is prevented, till the occiput has escaped in part beyond the arch of the pubis. If extension is allowed to take place too early, the effect would be to bring the largest diameter, viz., the occipito-mental, in relation with the vulva, so that a great increase of dilatation would be required in the escape of the head.

One so frequently hears practitioners recount the difficulties experienced in effecting the delivery of the placenta, that we would almost be justified in concluding that in this act nature is at fault, and that here we meet with a departure from the law that governs every other part of the great function of reproduction. Everywhere else we see in this function the most perfect and harmonious adaptation of means to an end, the parallel with which we will search for in vain elsewhere. Or may we not say rather, that the phenomena of expulsion of the placenta may not have been fully comprehended. It does not appear reasonable to suppose that, in this function, inherent difficulties should be met with often, so serious as to thwart the process of nature.

The ordinary delivery of the placenta is a very simple duty. At the same time, the proper delivery of the placenta is a very important duty. Nature requires but little assistance usually, but that little assistance should be given at the right time and in the proper manner. It is a serious error to forcibly extract the placenta too soon after the birth of the child. This practice causes hæmorrhage, syncope, and endangers inversion of the uterus. In natural labor, I would insist upon the necessity of permitting the contractions of the uterus to separate the placenta and close the sinuses. The time required for this would vary from fifteen minutes to half an hour. So much depends upon the manner of the delivery of the child, that it is impossible to do more than to approximate the time that would be required by

nature to separate the placenta. Manifestly, the uterus would contract more slowly, and there would be a corresponding liability to hæmorrhage, were the child delivered suddenly, than if the inferior extremities were allowed to remain till uterine contractions expelled them.

Not only will the placenta be managed in this manner most successfully, but the patient will thus be best protected from post-partum hæmorrhage and septicæmia as well.

This word septicæmia leads me to add one other suggestion, and that refers to the necessity for the most careful cleanliness on the part of the accoucheur during the labor, and of the patient after delivery. There are other topics which I would be glad to present, but I have trespassed upon your patience too long already.

Of the work performed by this society during the year, it can hardly be necessary for me to speak except in general terms. The regular number of meetings have, I believe, been held, and I am happy to add that the members have faithfully responded to the requirements of our compact, in presenting papers and conducting discussions. The amount of work done by the society, as well as its quality, can best be appreciated by those who have been present at the meetings. The number of papers which have been printed has not been large, nor has the publication of the discussions been extended, and therefore it would be impossible from this source to form a just estimate of the quality of the work done or of the efficiency of the society.

I would do violence to my own feelings, did I neglect to thank the officers of the society for the punctuality and regularity with which they have, individually and collectively, discharged their several duties, and to each of the Fellows I extend my heartfelt thanks for their uniform courtesy during the year.

ARTICLE II.

A CONTRIBUTION TO THE MINUTE ANATOMY OF THE SKIN.

By C. HEITZMANN, M.D., of New York. Read before the American Dermatological Association, Newport, R. I., Sept. 1, 1881.

The apparently complicated structure of the integument becomes easily understood, if we keep in mind that there are but two main tissues entering the structure of the skin, viz., connective tissue and epithelium. The connective tissue produces the flat layer, called derma; the epithelium covers the derma on its outer surface. The boundary line between the two formations is not even, but fluted, supplied with numerous small protrusions of the derma, the so-called papillæ, the sum total of which bears the name "papillary layer." The bundles of the connective tissue everywhere run an oblique course; they are arranged in the shape of a coarse reticulum in the lowest portion of the derma, whose rhomboidal meshes contain a varying amount of fat-globules, the so-called subcutaneous tissue. In the derma proper, the bundles run in two almost rectangularly interlaced directions, thus producing a very dense felt, which by being tanned gives the leather. On the lowest portions of the derma the bundles are relatively coarse; they become the finer the nearer the papillary layer, and in the latter very delicate connective tissue fibers are noticeable only without a distinct arrangement into bundles. The epithelial formations on the top of the derma, again, exhibit two main layers, the lower one, that nearest to the papillary layer, being alive and supplied with nerves, the so-called rete mucosum; while the outermost layer is composed of dry, horny epithelia, giving the formation called epidermis.

The connective tissue is supplied with blood-vessels and lymphatics; the epithelium lacks such formations.

If we now imagine that the connective tissue, together with the covering epithelium, were a pliable sheet, for instance, of chamois, and we produce a depression of this sheet with one of our fingers—the result will be a pouch, whose innermost layers are epithelial, whose outermost layer is connective tissue. The epidermis will cover the inner surface of the pouch, and now bear

the name "inner root-sheath;" next to this will be a layer, formed by the epithelia of the rete mucosum, which will be the "outer root-sheath;" the outside of the pouch must be connective tissue, and will represent the "follicle." On the bottom of the pouch will be a protrusion of the follicle, kindred to those on the surface of the skin, therefore connective tissue, the "papilla of the hair."

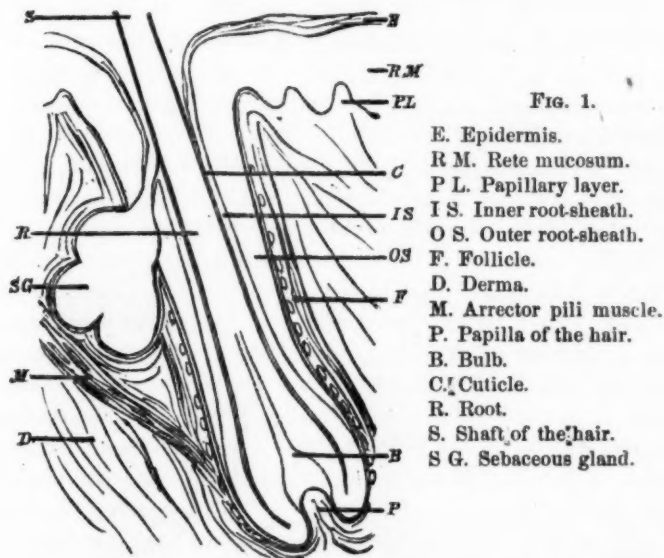
On our diagram slight alterations must be made. The epidermis, which is composed of a large number of flat epithelia, greatly varying in accordance with the width of this layer, upon entering the pouch and becoming the inner root-sheath, will gradually be reduced to a limited number of horny epithelia, in the midst of the pouch to not more than two strata. Near the bottom of the pouch the number of the epithelia again increases, the inner root-sheath gains in width, and is composed of three or four strata of epithelia, which have lost their horny character, and become of a protoplasmic nature again. The rete mucosum enters the pouch in its full width, but gradually becomes thinner, namely, composed of a smaller number of epithelia, which retain their original protoplasmic character, and at last, near the bottom of the pouch, after being reduced to a single layer, completely disappear.

Imagine, now, that against the bottom of the epithelial pouch, which, according to the main direction of the connective tissue bundles, runs in an oblique direction, a pin is pressed and the pouch turned upward again. This procedure, of course, will involve the inner root-sheath exclusively, and an elongation must result, of an epidermal character, according to the main character of the inner root-sheath. This elongation represents the hair.

The hair, therefore, is a solid elongation of the hollow inner root-sheath, and produced by the inner root-sheath alone. The outer root-sheath has nothing to do with the formation of the hair. On the bottom of the pouch there is a knob, composed of living protoplasmic epithelia, like those of the inner root-sheath in the same situation. This knob is called the bulb of the root of the hair, and directly surmounts the papilla of the hair. Higher up the epithelia become horny once more, and go to build up the root and the shaft of the hair.

Imagine, lastly, that on the side of the acute angle of the obliquely implanted pouch, the outer root-sheath, as said before, an off-shoot of the rete mucosum, be pushed laterally and downward by a pin, the result will be a third elongation, produced by the outer root-sheath, a small pouch itself, bearing the name "sebaceous gland." According to this diagram, the sebaceous gland is exclusively a formation of the outer root-sheath, while the inner root-sheath has nothing to do with the formation of the gland.

The idea of the production of the root-sheaths, the hair and the sebaceous glands, is illustrated by the accompanying diagrammatic figure 1. The explanation is as follows :



The epidermis, bulging downward, results in the formation of the inner root-sheath, while the rete mucosum, elongated downward, results in the formation of the outer root-sheath.

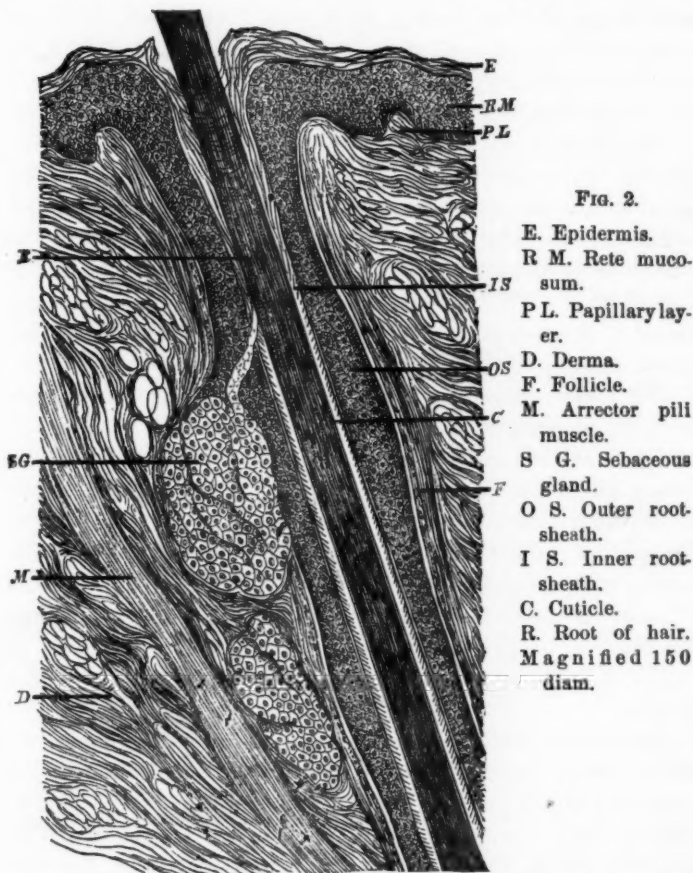
The bundles of the connective tissue of the derma, which give an outer investment to the pouch, composed of both root-sheaths, produce the follicle. Its innermost portion exhibits cross-sections of smooth muscle-fibers.

The papilla of the hair is a product of the follicle. Around the papilla is a knob, the bulb of the root of the hair, which continues into the root of the hair—that part inclosed in the pouch; and the shaft of the hair—that part standing forth on the surface of the skin.

The diagram shows that the inner root-sheath, upon approaching the bottom of the pouch, becomes widened, and on the bottom of the pouch turns over, thus first producing the bulb, afterward the root, and the shaft of the hair itself. The innermost layer of the inner root-sheath, by turning over, results in the formation of the cuticle, the single investing layer of both the root and the shaft of the hair.

The figure demonstrates, furthermore, that the outer root-sheath, upon approaching the bottom of the pouch, grows thinner and perishes at last, while on one side the outer root-sheath produces the pouch of the sebaceous gland. Between the outer root-sheath and the follicle there is a homogeneous layer, the so-called "structureless membrane." The arrector pili muscle is in connection with the muscle-layer of the follicle, and surrounds the bottom of the sebaceous gland.

The diagram serves as a key, which enables us to easily comprehend all formations of the skin engaged in the formation of the hair. First, let us study the upper portion of the hair-pouch from a specimen of the human skin, fig. 2. The pouch, as a rule, has a funnel-shaped widening on the surface of the skin, which is covered by stratified epidermal scales. These scales are traceable in direct union to the inner root-sheath, which begins on the so-called neck of the pouch, being composed of two epidermal layers only, and in honor of the discoverer, termed *Henle's* sheath. Next to the inner root-sheath lies the extremely delicate cuticle of the hair, which ensheaths both the root and the shaft of the hair. With higher powers we see on each hair finely serrated edges, the slightly bulging edges of the cuticle. The hair is composed of closely packed, horny epidermal spindles, which hold a varying amount of pigment granules. The rete mucosum directly elongates into the outer root-sheath, and this into the sebaceous gland. It is only the duct of this gland which is covered by flat horny epithelia, while the gland, as such, is



composed of cuboidal epithelia, like any acinous gland. The duct of the sebaceous gland, as a rule, empties into the funnel-shaped widening of the pouch, in the space between the inner root-sheath and the hair, or, more particularly, its covering cuticle. The outer root-sheath is composed of several strata of epithelia, like the rete mucosum itself. The strata are cuboidal epithelia, and it is only the stratum next to the derma, or, more particularly, the structureless membrane, which is formed by columnar epithelium. The inner surface of the structureless membrane, again, is covered by extremely delicate, flat endothelia, as first demonstrated,

with the aid of silver-tinction, by *Czerny*. These endothelia, by very marked prickles and thorns, are directly connected with the adjacent columnar epithelia. To the presence of these thorns *D. Haight* first drew attention.

The pouch of the sebaceous gland is under the control of the arrector pili muscle, which represents a flat fan-like sheet, whose broad ends terminate in the papillary layer, while the narrow end is inserted in the follicle of the root of the hair. No doubt, the evacuation of the sebaceous gland is done by contraction of this muscle-sheet. The fatty mass will be squeezed first into the funnel of the hair-pouch, as a rule, and only on large sebaceous glands directly to the surface.

The lower extremity of the hair-pouch, in specimens taken from the human skin, is not readily comprehensible, unless upon the basis of the study of hairs of animals, especially of those strong hairs on the upper lip of kittens. This, perhaps, is the reason why, after many years' lively writing, not one author has given a plain description of the relations. As a matter of course, the essentials are identical in the hairs of kittens and those of man, though the former are, as a rule, more plain than the latter.

Fig. 3 illustrates the bottom of a hair-pouch from the lip of a kitten.

The inner root-sheath in its upper portion shows the light, horny *Henle's* layer. In an oblique line there appear polyhedral epithelia; at first pale and finely granular, with indistinct nuclei; deeper down coarsely granular and slightly elongated. This latter portion of the inner root-sheath represents what has been termed *Huxley's* layer. It is seen that on the bottom of the pouch this layer turns over, surrounds the papilla and constitutes the bulb of the root of the hair. The epithelia on the lower periphery of the papilla are columnar, gradually changing into the cuboidal form, and more upward becoming elongated, spindle-shaped. Lastly, they emerge into the horny spindles which produce the main bulk of the hair. The boundary line between the inner root-sheath and the root of the hair is given by a thin, apparently structureless layer, outside of which is the inner root-sheath, inside the cuticle of the hair. The cuticle on the upper

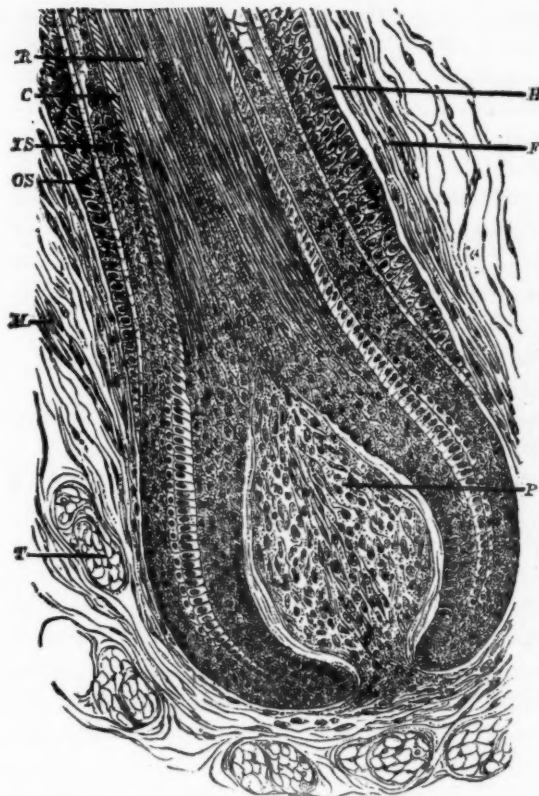


FIG. 3.

- F. Follicle.
 T. Transverse sections of connective tissue bundles of derma.
 M. Arrector pili muscle.
 I S. Inner root sheath.
 O S. Outer root sheath.
 P. Papilla.
 C. Cuticle.
 R. Root of hair.
 H. Hyaline, or so called structureless membrane.
 Magnified 300 dia

portion of the root is composed, as well as on the shaft, of thin, imbricated scales, whose edges are slightly bulging forth over the surface of the hair, and give the latter the peculiar serrated appearance. Gradually the epithelia of the cuticle of the root assume a columnar shape and become nucleated. At the height of the bulb these columnar epithelia are very large, paler, granular, supplied with large and distinct nuclei. Their characteristic row runs in the middle between *Huxley's* layer and the bulb, at last blending with the cuboidal epithelia of both formations. Outside of the cuticular row there is another thin layer of flattened, pale epithelia, which evidently corresponds to the innermost structureless layer of the inner root-sheath. The middle portion of the

bulb is often occupied by globular, indifferent or medullary corpuscles, which hold a varying amount of pigment, and fill also the central portion of the root, the so-called medullary space, which even in strong hairs may be absent. The outer root-sheath is composed, in its upper portions, of stratified epithelia, the outermost layer being distinctly columnar. The latter row is the last one left, as the outer root-sheath approaches the region of the bulb, and gradually becoming thinner, in turn is entirely lost at the height of the bulb, whose formation it does not enter at all. The boundary line between the outer and the inner root-sheath is again marked by the presence of a so-called structureless membrane. Outside the outer root-sheath we find the follicle, a connective tissue formation, with interspersed circular muscle-spindles, in connection with those of the arrector pili muscle. Between the follicle and the outer root-sheath there is usually a broad homogeneous layer, which can be traced around the bulb of the root and the papilla of the hair.

The papilla of the hair is composed of a delicate fibrous or myxomatous connective tissue, freely supplied with protoplasmic bodies and spindle-shaped nuclei, and traversed by a number of capillary blood-vessels. The apex of the papilla in our specimen is not distinctly separated from the epithelia of the hair. The line of demarcation, however, as a rule, is distinguished by the presence of a row of columnar epithelia, or the medullary corpuscles.

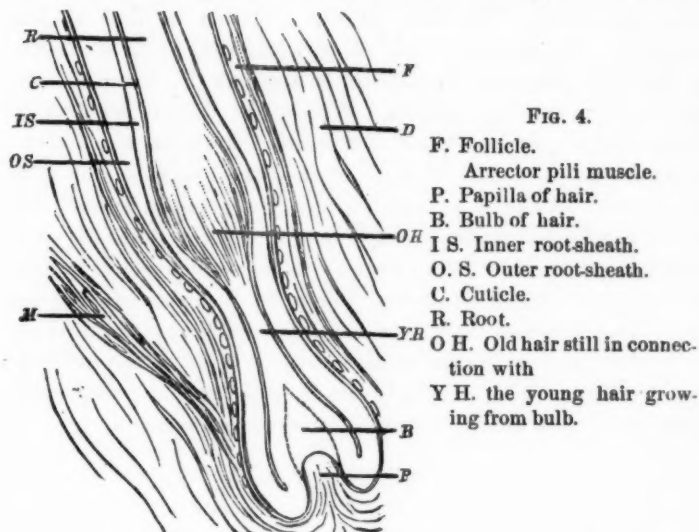
Outside of the follicle there is the fibrous connective tissue of the derma, built up by longitudinal and transverse bundles.

In comparing what I have said about the theory of the formation of the hair with specimens of the skin, a satisfactory congruence will be found. This theory, as I have taught it for nearly seven years in my laboratory, will explain the fact that the inner root-sheath is withdrawn simultaneously with the root upon pulling a hair. It furthermore explains the process of shedding and the new formation of the hair.

We know through *Kölliker* and *C. Langer* that the young hair is formed around the old papilla. We know that at a certain height above the papilla there is a knob-like thickening (*Henle*), which corresponds to the bulb of the falling hair. The fact that

I add is that the new growth of a hair takes place within the realm of the inner root-sheath exclusively.

Fig. 4 is a diagram of the process of shedding. The inner



root-sheath, below the bulb of the old hair, which latter is fringed by the torn epidermal scales, gradually becomes widened. On the bottom of the pouch it turns over and produces the bulb, which is composed of medullary, or indifferent or embryonal corpuscles. The boundary between the two portions of the inner root-sheath is established by the cuticle, which, below the bulb of the old hair, is composed of columnar epithelia. The pigment, where there is any, lies exclusively in the central portion of the inner root-sheath, the future hair. The outer root-sheath has nothing to do with the new formation of the hair. The smooth muscles of the follicle evidently play a part in the process, inasmuch as through their contraction a narrow neck is established around the young hair, as first suggested by *Biesiadecki*.

With the views here advocated, also, the formation of the sudoriparous glands becomes understood. We simply may assume an elongation of the outer epithelial layers into the depth of the derma. The duct within the epidermal stratum shows windings,

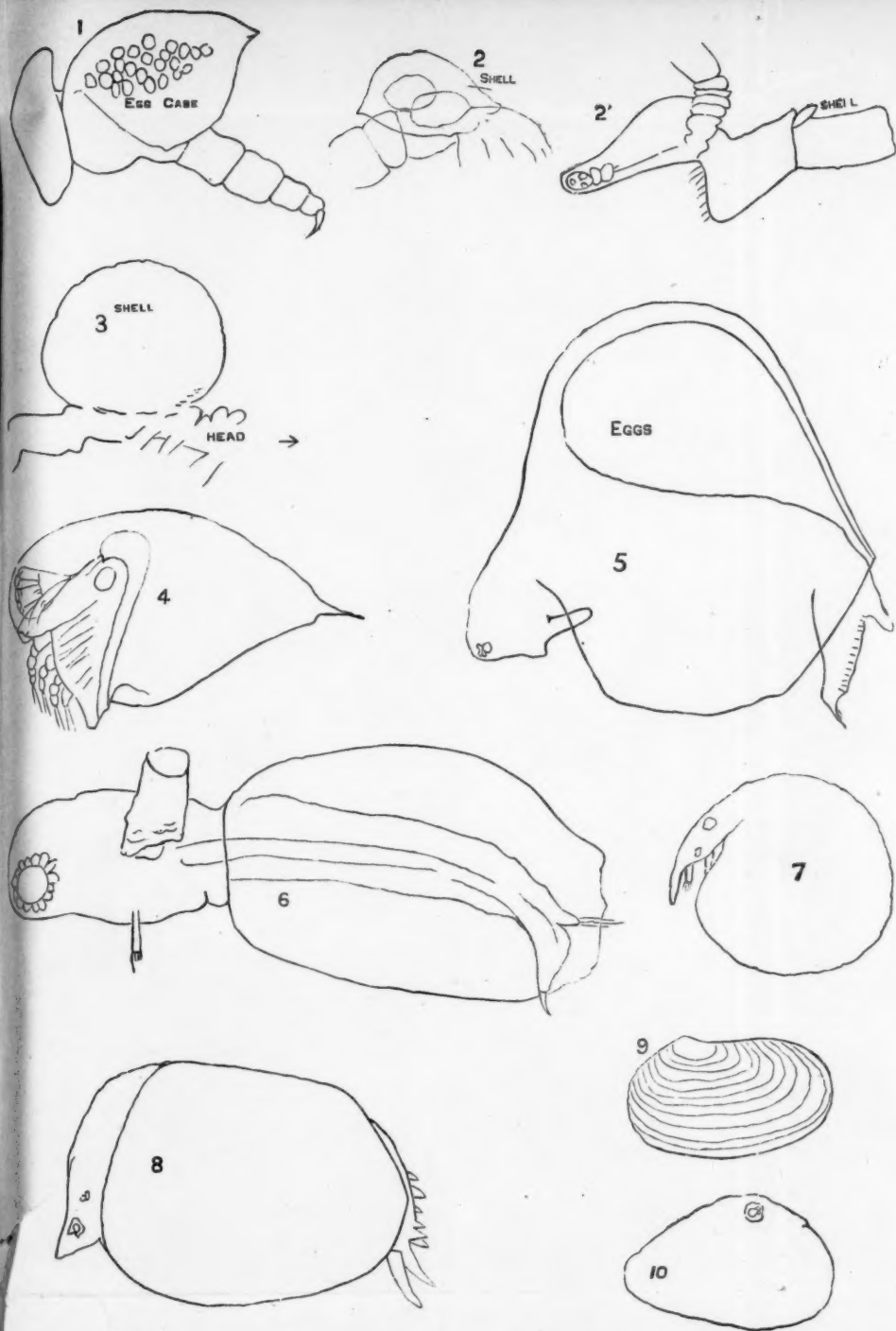
which, on places where the epidermis is thin, scarcely are perceptible, while on places, such as the soles of the feet, where the epidermis is very thick, they exhibit the characteristic corkscrew-like appearance. The duct in this situation is lined by flat epithelia. On the point where the duct pierces the rete mucosum, in the valley between two papillæ, as a matter of course, it must be lined by stratified epithelia. Within the derma the duct is composed only by one layer of columnar epithelia, which obviously are an elongation of those of the lowest layer of the rete mucosum. The tube, as it begins to coil up, is lined by cuboidal or short columnar epithelia, also in one layer. Both the duct and the coil are invested by a somewhat denser connective tissue, and supplied with blood-vessels. Between the connective tissue and the epithelium there is sometimes a distinct structureless or hyaline layer. Larger coils, especially those of the axillary pit, we know to be supplied with smooth muscles, which are imbedded in the ensheathing connective tissue capsule.

ARTICLE III.

NOTES ON CRUSTACEA IN CHICAGO WATER SUPPLY, WITH REMARKS ON THE FORMATION OF THE CARAPACE. By E. A. BIRGE, Professor of Zoölogy, University of Wisconsin, Madison, Wis.

Through the kindness of President B. W. Thomas, I have from time to time received valuable specimens of the animal and vegetable life of the Chicago water supply, a subject to which he has devoted much labor. In these specimens I have observed the following species of Cladocera, the group of Crustacea in which I am especially interested.

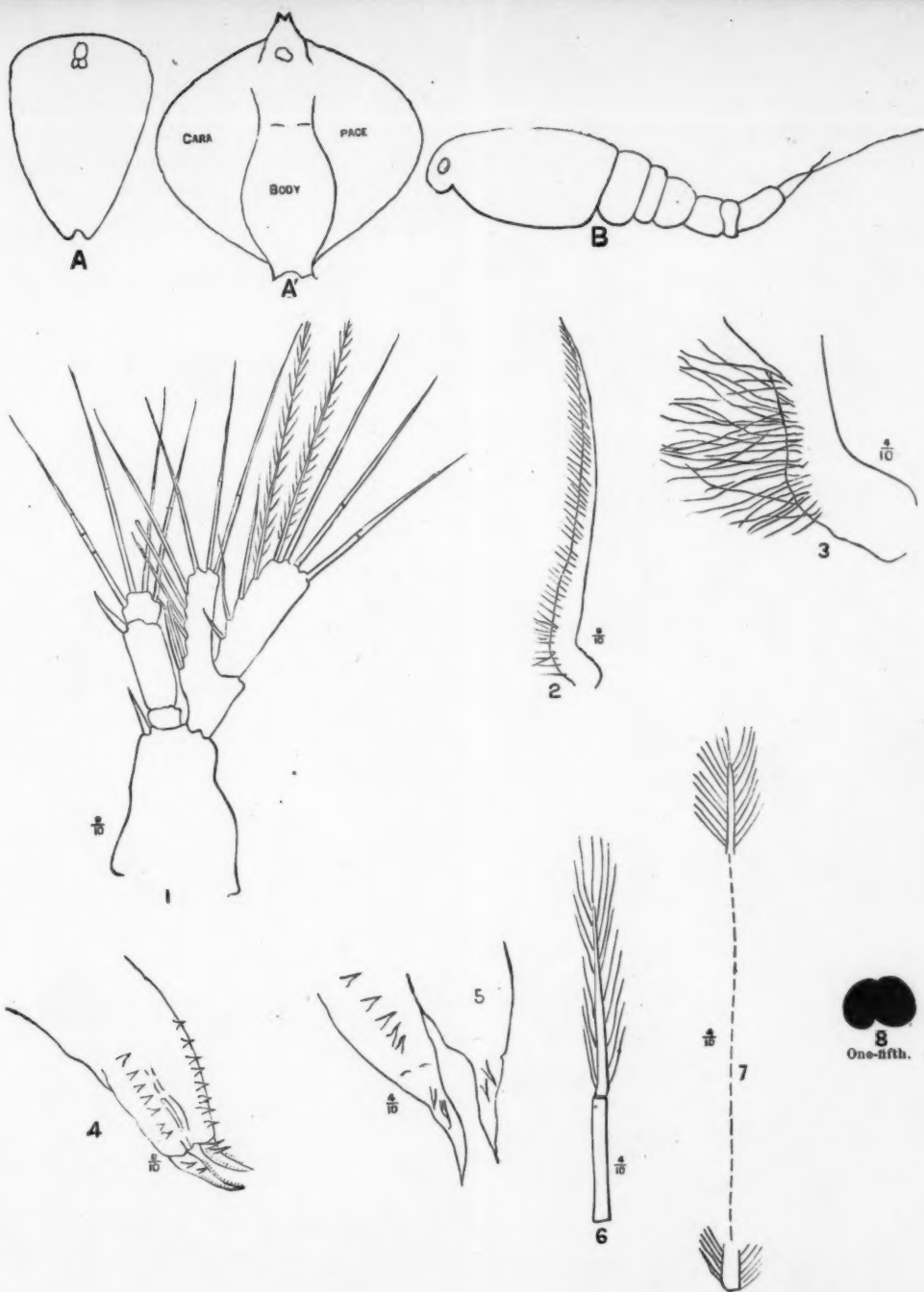
- | | | |
|------------|---|-----------------------------------|
| Sididæ. | { | Sida crystallina—O. F. Müller. |
| | { | Latona setifera (?)—O. F. Müller. |
| Daphnidæ. | { | Daphnia pulex—De Geer. |
| | { | “ galeata (junior) (?) |
| Bosminidæ. | — | Bosminia longirostris (?) |



EXPLANATION OF CUTS.—LUTONA.

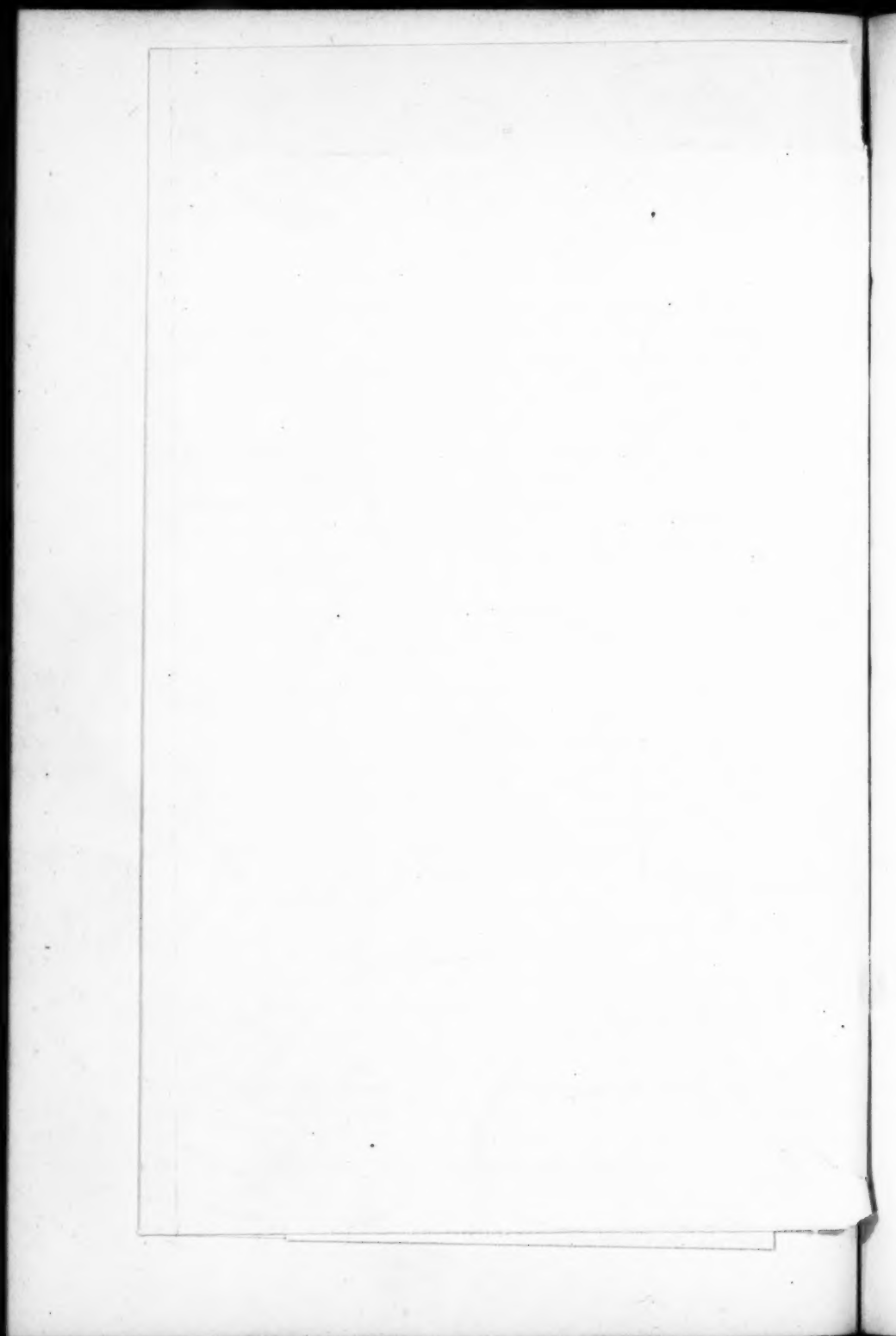
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|--|-----------------------------|
| 1. Antenna. | 6. Hair of Post Abdomen. |
| 2. Antennule. | 7. Hair of Antenna. |
| 3. Angle of Antennule to show sense hairs. | 8. Macula Nigra from below. |
| 4, 5. Post Abdomen. | |

A.
A.
B.
1.
2.
2.
3.



EXPLANATION OF CUTS.—ORIGIN OF CARAPACE.

- | | |
|--|--------------------------------|
| A. Nauplius, shell of Cyclops, from above. | 4. Shell of Evadne. |
| A'. Nauplius, shell of Limnetis, from above. | 5. Shell of Holopedium. |
| B. Outline of Cyclops, to show Carapace. | 6. Shell of Daphnella. |
| 1. Egg-case of Doropygus. | 7. Shell of Chydorus. |
| 2'. Anterior portion of Leptodora. | 8. Shell of Young Estheria. |
| 2. Shells of Female Leptodora. | 9. Shell of Adult Estheria. |
| 3. Shell of Polyphemus. | 10. Shell of Ostracoda—Cypria. |



- Lynceidæ. { *Camptocercus macrurus*—O. F. M.
 { *Pleuroxus insculptus*—Birge.
 { " *denticulatus*—Birge.
 { *Chydorus sphaericus*—O. F. M.
 { *Alona* (?) two species unidentified.

All these species, except the second, are abundantly distributed in this country and elsewhere. They are what might be expected in any water derived from lakes, and do not argue any special impurity in the water. Indeed, with the doubtful exception of *Alona*, they are all species preferring the clearer waters. *Alona* is a genus of very various habits, some species being decidedly limicolous, while others haunt weedy but clear water, and others still may be found in places quite free of weeds. The list is thus, on the whole, conspicuous for the absence of dirt-loving Cladocera. The absence of some well-known species may occasion some surprise. None of the very abundant forms are present except *Chydorus*. One would have looked for some *Simoccephalus* or *Ceriodaphnia*, and no doubt these will be found in due time.

I have at hand no very full description of *Latona setifera*, O. F. M., with which to compare the specimens sent me from Chicago. The two descriptions which I have—Leydig's and P. E. Müller's—are not in complete accord. Still, I think that our specimens belong to that species. They had been mounted, and so had been flattened, and unfortunately, in every case were vertically compressed. So delicate were they that I could not get them flattened in the other direction, and must content myself with some notes and rude sketches of some of the details of structure.

The animal is everywhere exceedingly rare. It has been seen in Germany, in Sweden and in Denmark, in Europe, by Müller Sars and P. E. Müller, respectively, and in this country by Mr. Edward Burgess, of the Boston Society of Natural History, in Cochituate water, and now by Mr. Thomas in Chicago. Other observers have probably met with it, but I have no record of the fact.

The size of the specimens is from two to two and a half mm. in length. The lower edge of the valves is armed with numerous

long setæ, from which the name of the species is derived. Leydig (*Naturgeschichte der Daphniden*) says that the anterior and posterior edges only of the valves are thus armed, but as he had not seen the species himself, this may easily be an error. Between each of the large setæ are three or four very small spines. Fornices are present. The rostrum forms a broad plate projecting over the base of the rather small labrum. The antennules are long, and covered with sense-hairs to the end. I find no trace of the "setæ sensuales obtusæ" described by P. E. Müller (*Danmarks Cladocera*, Pl. VI, fig. 22), and figured by him on the inside of the antennule, near the base. (See my figs. 2 and 3). The antenna (fig. 1) afford one of the most striking peculiarities of the animal. They appear three-branched, but in reality have but two branches, like those of all Cladocera. The basal joint of the two-jointed branch is projected out between the two branches, so as to look like a third division. The joints of the three-jointed branch bear respectively 4-0-0 setæ; of the other branch 8-9 setæ respectively; spines 0, 1, 0 and 0, 0, and one on the basal joint. These setæ are plumose, especially the terminal joint (fig. 7).

Both maxillæ seem to be present. This fact was noted by Claus (*Zeitschrift für Wissenschaft. Zoölogie*, Vol. XXVII) in *Sida*, but I have been entirely unable to confirm his observations by my own on American specimens. Here, however, both seem to be functional.

As in *Sida*, there are six pairs of legs, and the post-abdomen closely resembles that of *Sida*. It has eight abdominal teeth in each row. The terminal claws are provided with two spines, and a row of very fine teeth on each edge (figs. 4, 5). The abdominal setæ are two-jointed, and the terminal joint bears long, fine hairs (fig. 6).

The macula nigra is double (fig. 8).

On the Origin of the Carapace in Crustacea.—In his *Anatomy of Invertebrated Animals* (p. 315), and again in his *Crayfish* (p. 449), Prof. Huxley brings forward—not for the first time—his theory of the decapod carapace. Briefly stated, it is this: "The carapace corresponds with the terga and tergal halves of the pleura of all the somites, which are thus reflected into it,

and these include, without exception, all from the last thoracic to the ophthalmic." The ordinary theory is well known. It is that of Milne Edwards, that the post-mandibular part of the carapace is a reflection of the tergum and pleura of the mandibular segment.

It may be questioned whether a form bearing only three segments can be the primitive form of crustacea. Whether the nauplius, however, is or is not such a form, makes little difference, since all groups of crustacea pass into the nauplius stage, and their carapace is derived in some way from the nauplius-shell. This nauplius-carapace, then, we may call the *primitive carapace* (figs. A, A¹). It is an oval, unsegmented shield, hardest on the back, where it serves both for protection and for attachment of the muscles which move the appendages. These are now three, antennule, antenna, mandible. This carapace may barely cover the back, as in *Peltogaster* and many other forms, or, as in *Limnetis*, it may extend broadly out on the sides.

In no adult form is the number of segments so small as three, and in all forms which pass through the nauplius stage after leaving the egg, more or fewer of the segments which appear as development goes on, are anchylosed to the three already present. The two maxillary segments are always thus united, and others may be, up to the number of eight. Thus a sort of carapace may be found covering the first five segments at least. This carapace may, when developed, take one of two general forms, which we may name respectively the *copepod-form* and the *phyllopod-form*.

If the development of a form like *Cyclops* among the Copepoda be watched, it will be seen that the shape of the body and the direction in which the appendages point is gradually altered, as well as the shape of the appendages and the number of segments. The body, at first relatively flat and thin, becomes horizontally compressed, and the appendages, from pointing outward, are directed downward. The carapace also undergoes modification. It is extended downward into pleura which protect the bases of the legs, and enlarged by the addition to it of new segments, in *Cyclops* three in addition to those already present. In other Copepoda more or fewer segments may be added, but in

all cases the result is the same—a firm anterior shield is formed by the coalescence of the skeletons of the anterior segments, and this is extended downward into pleura to protect the appendages (fig. B). This form is found not only in Copepoda, but in the anterior shield of Trilobita, in Pœcilopoda, in the heads of Amphipoda and Isopoda, and in Arachnida and Insects. This form of carapace plainly agrees with Prof. Huxley's definition.

Very different is the origin of the other form. The nauplius larva of *Limnetis* gives us a hint of its source. The phyllopod form of carapace arises from the backward extension of the nauplius-carapace, covering the segments which are developed behind the mandibles. Our Cladocera show it in a well developed form, a large bivalve shell, covering body and legs, but free from both (figs. 5, 6, 7). In other forms it is more extended, enveloping not only body, but head as well. Such is the case in the Ostracoda, in *Estheria*, *Limnetis* and allied forms (figs. 10, 9). In these cases it always, I think, arises from the mandibular segment, although such is not necessarily its origin.

Before passing to consider to which form the decapod-carapace is allied, let us cast a glance at the possible origin of this form of carapace. In *Notopterophorus*, a copepod, we find the dorsal parts of the segments prolonged into a sort of crest, and in *Doropygus* we find the last thoracic segment expanded, and used as an egg-case (fig. 1). This case is of course homologous in a broad way to the two cases in which *Cyclops* carries its eggs, but here we have the skeleton more obviously made use of as a case.

Now, when we come to the Cladocera, we find the bivalve shell made use of as an egg-case, and in certain forms—the *Gymnomera* of Sars, including the genera *Leptodora*, *Polyphemus* and *Bythotrephes*—as such a case only. In these the carapace is rudimentary (figs. 2, 2', 3). *Leptodora* has a long segmented abdomen; only the females have a small shell, capable of holding two eggs; the males and young females are shell-less. *Polyphemus* has a small but permanent shell. *Evadne* has a much larger carapace (fig. 4), but one from which the legs are still free. *Holopedium* (fig. 5) has the regular phyllopod form, but has the egg-case still as a prominent feature. In *Daphnella* (fig. 6), we get the ordinary form.

In Chydorus we find the carapace beginning to encroach on the head, and this feature carried to extremes in Ostracoda and Limnadiidæ (figs. 7, 8, 9, 10).

Now, is this series, from Daphnella to Leptodora, given in the direct or inverse order? Have we here a direct or a retrograde metamorphosis? Is the carapace a developed egg-case, or the egg-case a rudimentary carapace? The question is too large to be answered fully at present, but one or two considerations may be urged to show that the carapace develops from the egg-case. The Cladocera are a very old group, showing all sorts of cross-affinities and retention of primitive features where they would least be expected. Such is the curious modification of the primitive antennule—undoubtedly like that of Latona—seen in the Bosminidæ and in the males of Ceriodaphnia, and other such features might be adduced. Two groups are remarkable for retaining primitive structures—the Sididæ and Gymnomera—and the position turns on the decision as to which of them most nearly represents the primitive form. From the structure of the antennules, of the antennæ especially, and of the legs, I conclude that the latter represent more nearly the “Ur-cladocera,” and this conclusion is strengthened by the fact that Leptodora alone of the Cladocera has a free nauplius form. I believe that the phyllopod carapace originated as an egg-case.

To which form, then, is the decapod carapace allied? Whatever be the answer for Astacus, it seems tolerably plain for the rest of the Podophthalmata. Passing over Schizopods, a glance at the development of Peneus will show that its carapace belongs to the phyllopod type. It is free from the body behind the mandibles, and remains so for a very considerable time. So, too, the carapace of Squilla remains permanently free. The same is true for all decapods which pass through the zoëa stage. The zoëa-carapace is plainly of the phyllopod type (to which group, indeed, the zoëa is allied in many ways), and the carapace of the adult is derived from that, either directly, or indirectly, by means of the megalops stage. In no case of decapods which undergo a metamorphosis, can the carapace be referred to the copepod type.

What modifications this carapace may undergo in so modified a

development as that of *Astacus*, may be a subject for further discussion. But plainly the inference which follows from Prof. Huxley's treatment of the subject in his *Invertebrates*, is incorrect. The decapod carapace in general conforms to the phyllopod type, not to that of the Copepoda.

I do not think Prof. Huxley's position tenable for the crayfish itself. On this point I speak with great diffidence, since I have never investigated the embryological development of the crayfish for myself. In studying that of *Panopæus*, I observed that the carapace, soon after its first appearance, apparently belonged to the segments as far back as the first maxillipedes. Subsequent changes showed that this was not the case, but that the still relatively undifferentiated condition of the blastoderm gave rise to the appearance. After hatching, the true relations of the carapace plainly appeared. In the passage from the zoëa to the megalops stage, the carapace, once free, became attached to the hinder thoracic segments. Now, my own belief is that in the crayfish, since it leaves the egg in a post-megalops stage, has syncopated this process of development and subsequent adhesion, and that consequently the appearance is that the carapace belongs to fourteen segments, instead of three. I have, however, no direct proof of this theory. It is only a "guess at truth," and I offer it merely as such.

ARTICLE IV.

STUDIES IN THE MEDICAL BOTANY OF SOUTHERN ILLINOIS.

By J. M. G. CARTER, A.M., M.D.

II.

The therapeutic agents mentioned in this article all belong to the botanical division called Monopetalous Exogenous Plants. The division is large, and it contains a long list of valuable remedies, many of which are found in this section of Illinois.

Several plants of the Honeysuckle Family (*Caprifoliaceæ*) are used in practice. *Lonicera Caprifolium*, containing the species *L. Sempervirens*, or Trumpet Honeysuckle, and *L. Grata*, or

Woodbine, has been prescribed, in the form of syrups, for asthma and other lung troubles. In domestic practice the juice of the plant is frequently used for the bites and stings of insects. The bruised plant may be placed on the injury as a poultice, or the juice rubbed on as a linament. The fruit of all species of *Lonicera* is said to be emetic and cathartic.

To this order belongs Fever-wort, Fever-root, or Wild Ipecac (*Triosteum Perfoliatum*, *T. Augustifolium*). It is also called Horse Gentian. It is a bitter tonic in small doses. In larger doses it is a diuretic; and in doses of 20 to 30 grains of the bark of the root, it is emetic and cathartic.

Sambucus Canadensis (Common Elder) has been used in domestic practice as a tonic in the form of "bitters." This member of the *Caprifoliaceæ* is tonic, diaphoretic, diuretic, alterative, emetic and cathartic. The juice of the berries is aperient, and has been recommended in constitutional diseases and eruptive affections as an alterative. It has been thought of especial value in rheumatic, syphilitic, and gouty diatheses. For these diseases the juice of the root or berries may be given in doses of fifteen drops four times a day. In tablespoonful doses it may be used as an emetic, or as a hydragogue cathartic in dropsy. One dose a day will probably be sufficient for either purpose. It is sometimes recommended for epilepsy. How does it act in this malady? This is a question which I cannot answer. I have not used the remedy in this disease; but I presume that whatever benefit is derived from it must be due to the valerianic acid and tannic acid contained in it. If epilepsy is due to variations in the caliber of the cerebral vessels, as has been asserted, the sedative and astringent properties of these constituents might have some slight beneficial effect.

Perhaps the most important genera of *Caprifoliaceæ*, considered from a medical point of view, is *Viburnum*. The particular plant of this genus to which I wish to call attention is *V. Prunifolium* (Black Haw.) This is one of the new remedies in regular practice, but the Eclectics have used it for many years. Its value as a tonic and uterine sedative has been brought before the profession by Drs. D. L. Phares, E. W. Jenks, and others. It is of especial value in threatened abortions. It may be given alone

in such cases, or used in conjunction with opium. It has been recommended as antispasmodic, astringent and diuretic.

I have used this remedy in about one hundred cases of uterine or ovarian diseases, and its administration has been attended with remarkable success. I have used it in ovarian neuralgia; neuralgia of the os uteri; endometritis (especially chronic), whether general, corporeal or cervical; areolar hyperplasia; dysmenorrhœa; amenorrhœa; and hysteria; and in all forms of neuralgia and headache supposed to be due to some uterine trouble. That is, I have used it as a uterine sedative to control pains and soreness in the region of the uterus, to control leucorrhœa, pains in the back, dragging pains in front, etc.

I used it in one case of neuralgia and leucorrhœa due to lacerated cervix uteri. I prescribed the fluid extract in 3ss doses four times a day. After a month the patient stopped taking the remedy, and her improvement, which had been satisfactory, has not progressed any since; still, her present condition is better than before taking the medicine.

The value of the remedy in dysmenorrhœa may be shown by referring to the case of a young married lady (married one year) who had been suffering every month for some two years, her trouble gradually growing worse. When I was called she was in one of her severest paroxysms of pain. I gave anodynes for temporary relief, and kept her upon a mixture of *V. Prunifolium* and *Valerian*, chiefly the former, until the next monthly sickness. This time her suffering was so slight that I was not consulted. She continued taking the mixture, having no special pain or sickness next month, and has not had since—several months. A case of hysterical paroxysms, which had been increasing in frequency and severity for four years, but which yielded to the action of the Black Haw in less than three months, might be described.

Eupatorium Perfoliatum and several other varieties of *Eupatorium* (*E. Altissimum*, *E. Sessilifolium*, *E. Scrobinum*), are found in S. Illinois. *E. Perfoliatum* is generally called Thoroughwort in the North and East, but in this section it is better known as Boneset. Boneset is one of the best-known remedies in our portion of the State. Many persons make free use of it when feeling

"bilious," dull headache, impaired appetite and general malaise. I have frequently prescribed it in such cases myself with excellent results. Sometimes I direct a tea to be made of the leaves or tops, to be taken *ad libitum*. Frequently I direct two ounces of the leaves to be boiled in a pint of water, and prescribe one or two tablespoonfuls t. d., generally before meals.

When it is desired to keep the preparation for some time, it is better to add an ounce of alcohol to each pint. It is said that the cold infusion, or the powder, is best for its tonic effects. The infusion should be warm, and the patient should be covered up in bed to obtain its diaphoretic effect. The decoction I have mentioned may be given in doses of ℥iv to ℥viij for the action of the remedy as an emetic or cathartic. It is used in intermittent, remittent and typhoid fevers.

Erigeron belongs to the same family as Eupatorium, Compositæ. The Erigeron Canadense is the most important variety or species found in Southern Illinois. I believe E. Philadelphicum and E. Annuum are found in this part of the State also, but I am not aware of any general or domestic use of them other than what is given in the books.

Golden-rod (Solidago) is another Composite of medical interest which grows abundantly in this region. The varieties found here are S. Bicolor, S. Speciosa, S. Petiolaris, S. Missouriensis, and others. This aromatic, stimulant, carminative, and diaphoretic, is not used by the common people and rarely by the profession, so far as I am aware. Ambrosia (Ragweed), two or three species of which are found, is an Eclectic remedy—a tonic in low fevers.

Helianthus (Sunflower), another of the Compositæ, I mention only because it has the reputation of protecting against malaria. It is said that malarious districts have been rendered healthy by planting H. Annuus. The pith of the same plant has been recommended for the preparation of moxa on account of the niter which it contains. To the same order belongs the Bidens Bipinnata (Spanish Needles.) This has some reputation among the people as an emmenagogue. The root and seeds of this and other species (B. Froudosa, B. Connata) are thus used, and are prescribed by the Eclectics as expectorants in laryngeal and

bronchial diseases. They may be used in infusion, or better, in decoction. For its emmenagogue effect let the patient drink a teacupful of the warm tea of the root (3j to Oj) every two hours.

Perhaps there is no Composite of medical value which grows more abundantly than Wild Chamomile (*Maruta Cotula*) in this part of the State. This is the common Mayweed, known in some places as Dog Fennel. Its physiological action and its therapeutic uses are similar to Chamomile (*Anthemis Nobilis*), and it may be substituted for that remedy. The remedy is best administered in the form of an infusion. The bruised plant, or the infusion, have been recommended for ulcers. The application is said to cleanse the part and restore the normal color. Mayweed has been thought to be emmenagogue also. The flowers are more pleasant for internal use; but the entire plant is active.

Tanacetum Vulgare (Common Tansy), of this order, is very common in Southern Illinois, escaped from gardens. The leaves and tops are used. The remedy is also emmenagogue. It is tonic, deobstruent and anthelmintic. Dose, 3ss to 3j. The infusion may be used as a tea. The seeds are used as a vermifuge. The acid—tanacetic or tanisic—is prescribed for the same purpose. The remedy has been recommended in epistaxis, the odor being sufficient to check the hæmorrhage sometimes (Dr. C. P. Uhle.) Tansy has been used in intermittent fever, arthritic paroxysms, hysteria, and amenorrhæa with asserted success. Tanacetic acid is equal to santonin in efficacy as an anthelmintic, and may be given in the same dose. "Tanacetic acid may be obtained by concentrating to the consistence of honey the residue after the distillation of the tops, heating with chalk and animal charcoal, and evaporating. If the residue be stirred with water, acidulated first with muriatic, and afterward with acetic acid, colored crystals of tanacetic acid are obtained, which are to be washed with distilled water."

The tansy tea is often given to girls who have "taken cold," where the menses are suppressed.

Of the Composite *Lappa Officinalis* (Burdock), there are three varieties in Southern Illinois (L. Major, L. Minor, L. *Tomentosa*.)

Burdock is a common domestic remedy. It is chiefly used as

a diaphoretic; it has value, however, as an aperient and as a diuretic. It has been recommended to the profession as valuable in cutaneous diseases; as herpes, lepra, psoriasis, prurigo, acne, and the skin diseases of children. I know the case of a boy who was suffering with itch (scabies), and determined to try what virtue there was in Burdock. He gathered quite a large quantity of the root of Common Burdock (*L. Major*), made a strong decoction of it, put it into a tub and bathed all over. In a few minutes he was covered all over the body with great wheals, which gave him intense itching, burning and pain. However, in a few hours these symptoms passed away, and with them the itch disappeared. The treatment was severe, but it produced a radical cure.

The remedy has been recommended also in nephritic affections, and in rheumatic, gouty, venereal, scorbutic, leprous, and scrofulous troubles. It has been used as a wash for chronic ulcers. The decoction is the preparation generally used.

Monotropa Uniflora (Indian Pipe, Corpse-Plant) is said to have been used in decoction as an alterative, or a tonic, by the common people of this section of the State. I have been told that formerly it was used to a considerable extent for this purpose in "biliousness." I have made a study of the plant, and am not aware that any other physician has ever made it the subject of investigation. Indian Pipe belongs to the Heath family (*Ericaceæ*), order *Ebenaceæ* (Ebony family.) The Persimmon, of opossum fame, belongs to this family. This tree, *Diospyros Virginiana* (Common Persimmon, Date-plum, American Date), grows in great numbers in our section. It has been used in diarrhœa, dysentery, uterine hæmorrhage, intermittent fever, sore throat, and by the people for making beer. The fruit was used formerly for making beer to a greater extent than now. The bark has been used in intermittents, and for ulcerated throat only, so far as I know. It may be given in the form of a decoction. For diarrhœa, dysentery and hæmorrhage it may be prescribed (that is, the fruit) as syrup, tincture or infusion. The green fruit should be used, as during the maturing process the fruit undergoes some change by which it loses its astringency.

Another genus of this large family is *Taraxacum*. *T. dens-*

leonis (Common Dandelion) is abundant in pastures and fields. This is a valuable remedy for such a region as ours, where the liver and spleen are generally involved in the various diseases with which we meet. It is especially in hepatic and splenic affections—engorgements—that it manifests a curative action. It may be used in both acute and chronic diseases of the stomach, liver and bowels.

The last plant of this order that I shall mention is Wild Lettuce. *Lactuca Canadensis* contains at least two varieties found in Southern Illinois (*L. integrifolia*, *L. sanguinea*.) It has been asserted by some physicians to have properties similar to garden lettuce (*L. sativa*), but this is denied by others. The actions which have been claimed for it are anodyne, diaphoretic and diuretic. I have not used it. The only plant of the *Lobeliaceæ* that I desire to mention is Indian Tobacco or *Lobelia* (*L. Inflata*.) This poisonous herb is used largely in domestic practice and by quacks, but it should not be confided entirely to their keeping. It should not be used as an emetic; but as an expectorant in asthma and bronchial diseases, cautiously administered, it is valuable. It is similar to Tobacco (*Nicotiana Tabacum*) in its action.

The Plantain family (*Plantaginaceæ*) is well represented in Southern Illinois. *Plantago Major* (Common Plantain) is a remedial agent of some value. It has been recommended for internal use in doses of one to four fluid ounces of the expressed juice. It is considered astringent, deobstruent, diuretic and refrigerant. The ancients used the remedy in visceral hæmorrhage and obstructions. I am only acquainted with its external use. It is freely used as a poultice in all kinds of ulcers and local inflammations, whether acute or chronic; in scrofulous tumors, and for dressing blisters. In modern times, as well as among the ancients, it has been used in consumption, dysentery, and intermittents, internally. The decoction may be used for either internal or external purposes. Externally, the leaves may be applied whole, sometimes bruised, or withered by dipping in hot water.

The Catalpa, of the *Bignonia* family (*Bignoniaceæ*), is represented by *C. bigonisides*. This tree, though not abundant, yet

grows in some places in considerable numbers. Many of them grow near Grayville, and are valued as fencing material. Their medicinal value is not so well understood. The *Catalpa* (Indian Bean) has been used by some European physicians in asthma. A decoction of the seeds is recommended. The fruit, a long bean, is generally considered to be poisonous. I have not used the remedy.

Verbascum Thapsus (Common Mullein) is the only plant of the Figwort family (Scrophulariaceæ) of medical interest that grows in Southern Illinois. Its properties are demulcent, emollient, and anodyne. It has been used in chest troubles. The tea is used in domestic practice. An infusion of the flowers has been used in mild catarrhs. A decoction of the leaves is said to be useful in diarrhœa. The dose of the infusion is one or two wineglassfuls. The mullein leaves are used in this vicinity as an anodyne poultice; this is the only use of the plant that I have made. The leaves should be dipped in hot water before using for external application.

Mentha Viridis (Spearmint), *M. canadensis* (Wild Mint), *Hedeoma Pulegioides* (American Pennyroyal), *Salvia Lyrata* (Lyre-leaved-sage), *Monarda Punctata* (Horse-mint), *Nepeta Cataria* (Catnip), of the Mint family (Labiatae), all grow in this region, and are used as domestic remedies, generally in the form of tea, for colds and colic. Sage tea is a favorite mouth and throat wash in ulcerated conditions of these parts. Many mothers use them freely for their daughters in dysmenorrhœa. Horehound (*Marrubium Vulgare*) is used in the same way, more especially in colds.

The Nightshade family (Solanaceæ) is represented in Southern Illinois by *Solanum Dulcamara* (Bittersweet), *S. Nigrum* (Common Nightshade), *Physalis Pubescens* (Ground Cherry), *Datura Stramonium* (Jamestown Weed, Thorn-apple), all of which have medical interest. Common Nightshade (*S. nigrum*) is a frequent domestic remedy, in the form of a poultice of the leaves and plant, to bruises, sprains, eruptions due to poisoning, etc.

Datura Stramonium is used as a poultice, domestically, over boils, carbuncles, painful tumors and local inflammations, bruises, stings of insects, etc. The latter remedy is very abundant, and

the physician frequently finds it convenient to make use of this plant. The leaves are generally used for poultices. The Ground Cherry may be used in the same way, but is not so efficacious. The fruit is edible.

I do not know of any other application or use of any of the Solanaceæ not described in the books.

Frasera Carolinensis (American Columbo), of the Gentian family (Gentianaceæ) is found in this part of the State. It is also called *F. walteri*. This is a simple bitter, and the infusion was so used formerly by physicians and people in domestic practice. The root is the part used. It may be employed in powder or decoction. I obtained my information concerning this plant from the late Dr. C. R. Smith. I have not seen it.

A valuable remedy of the Loganiceæ (*Logania* family) which grows in this section is *Spigelia Marilandica* (Pink-root). It is used in domestic practice, and sometimes in general practice, in the form of a tea, against the round worm (*Ascaris Lumbricoides*.)

ARTICLE V.

MALARIAL KERATITIS. By F. C. HOTZ, M.D., Chicago, Ophthalmic Surgeon, Illinois Charitable Eye and Ear Infirmary.

Malarial diseases are so frequent, that it is singular how little we know of their effect upon the eyes. The most of text-books say nothing about it; only Macnamara * mentions malaria as a frequent and important cause of hyperæmia of the retina.

The fact is, we have but begun studying the very interesting subject of the influence which may be exercised upon the tissues of the eye by malarial poison or other febrific agents, after their introduction into the blood.

Directly bearing upon this question was the interesting communication which Prof. Horner, of Zurich, made to the German Ophthalmological Society in 1871.* He had observed the erup-

* Manual of Diseases of the Eye; 3rd Ed., 1876. p. 390.

* See Klein. Monatsbl. 1871.

tion of herpetic vesicles on the corneæ of thirty-one persons afflicted with pneumonia or other acute affections of the respiratory organs. Subsequent observers confirmed Horner's statement; but at the same time they found that other febrile diseases (intermittent fevers, acute affections of the intestines, etc.) may also produce herpes of the cornea. A very large collection of cases of this "herpes febrilis corneæ," as it is called, has recently be enpublished by Dr. Godo, of Paris.* Referring to malaria as a cause of corneal herpes, he says that in at least one-third of his cases he could trace the affection of the cornea to the influence of malarial fevers.

But the descriptions of the cases which Dr. Godo reports as instances of malarial herpes, differ in no essential feature from those of his herpes cases due to other causes. It would be impossible to make a differential diagnosis from the local manifestations which are described, alike for all cases, as groups of minute vesicles in the peripheric cornea, which subsequently are transformed into superficial irregular ulcers, healing readily under the appropriate local and general treatment.

It was left to the careful and patient observer, Dr. Chas. J. Kipp, of Newark, to discover the peculiar and characteristic features by which keratitis due to malaria can be readily recognized, and easily distinguished from similar corneal troubles. The description the doctor furnished to the American Ophthalmological Society in July, 1880, is so true and clear that I may be allowed to reproduce his own words:

"If the eye is examined shortly after the first symptoms of irritation are noticed by the patient, one or two or more slightly raised opaque lines, of varying length, will be found on different parts of the surface of the cornea. At the same time, some circumcorneal injection will be present. On the following day these opaque lines will have increased in length, whilst at the same time the middle portion of the opacity has been transformed into a shallow ulcer. Under favorable circumstances, no further increase in size takes place, the remaining opaque epithelium is thrown off, and reparation begins, to be completed only after several months. But not unfrequently the ulcer continues for

* De l'herpès fébrile de la cornée. *Recueil d'ophtalmologie*, Mars, Avril, Mai, 1880.

days, and even weeks, to grow slowly in length, and at the same time sends out club-shaped, slightly raised, grayish offshoots from its sides. In some of my cases the ulcer crept across the entire cornea, and in a few others, in which several ulcers appeared simultaneously on different parts of the cornea, the whole epithelial layer was eventually destroyed. As a rule, the ulcer shows no tendency to increase in depth, and its floor and edges are usually of a bluish-gray tint. The middle and inner layers of the cornea generally remain transparent throughout, but in neglected or maltreated cases, an extensive star-shaped opacity of a slightly yellowish-gray tint is sometimes developed in the inner layers of the central part of the cornea. An hypopyon is but rarely seen, even in the severest cases, and spontaneous perforation of the cornea did not occur in any of my cases. A decrease of the tension of the eye-ball, or a diminution of the sensibility of the cornea, could not be demonstrated in any of the cases. The development and growth of the ulcer was always accompanied by very severe pain in and around the eye, more especially along the course of the supra-orbital nerve, and by photophobia and lachrymation. The process of repair was commonly initiated by the extension of blood-vessels from the limbus conjunctivæ toward the ulcer, and was in all cases extremely slow, two to four months being generally required for its completion."

Should any one find it difficult to conceive from Dr. Kipp's description a distinct image of the peculiar form of these malarial ulcers of the cornea, let me assist his imagination by the aid of some familiar object in nature. Draw within the compass of the cornea the outlines of a small lanceolate leaf, with its stem at the margin and its free end in the center of the cornea; have the central vein of this leaf run in a slightly zigzag course, and let the lateral veins be short. Now erase the outlines of the leaf, and the skeleton of the veins is a correct representation of the specific character of a malarial ulcer of the cornea. This form of the ulcer is as pathognomonic for malaria as the mucous patches in the mouth are for syphilis.

You will now appreciate the great importance of Dr. Kipp's discovery. It has revealed to us the signs by which we can

recognize the constitutional cause of this form of corneal ulcers ; it has rendered our diagnosis independent from the statement of the patient. We can positively diagnosticate the malarial character of the ulcer, whether the patient admits or denies having had malarial fever. He who is not familiar with Dr. Kipp's specific symptoms, will probably regard the trouble as a simple keratitis or a superficial abrasion of the cornea, which he expects to relieve in a few days by local remedies ; but he will be sadly disappointed by finding that the ulcer has been daily increasing in length, and the pain, photophobia and other symptoms have not been subdued by the liberal use of atropia and the bandage.

Local treatment alone is insufficient. Starting from the margin of the cornea, the ulcer will extend longitudinally to and beyond the center of the cornea, and eventually also become broader by implicating the epithelium between the lateral offshoots. But give your patient quinine, and you will arrest the ulceration at any stage of its progress, and speedily relieve the patient of a very painful and troublesome affection. The amelioration supervenes upon the administration of quinine (two grains every two hours) so promptly that it must be attributed to the influence of this medicine. And when the surgeon has faithfully but vainly tried for a week or two to subdue the trouble by appropriate local treatment, the sudden change following directly upon the use of quinine is so suggestive and striking as to convince even the most skeptical Thomas.

A few cases may serve as illustrations to the foregoing remarks.

I. C. W., aged twenty-six, short-hand writer, consulted me on Jan. 24. Five days previously he had a chill followed by high fever at night. The next day his right eye became red and painful, and has been growing worse ever since.

I found the eye extremely sensitive even to moderate light ; and every movement of the upper lid caused a sharp pain as if a gritty substance was cutting into the cornea. The tears were constantly running over the lower lid and the eye-ball showed considerable engorgement of the conjunctiva. In the cornea, near its upper margin, I discovered a minute linear abrasion of the epithelium. I prescribed the use of an ointment of atropine

(gr. ij to \mathfrak{z} j of vaseline), and dismissed the case. But on Jan. 29 the patient returned, stating that the treatment had given him no relief; that the pain had continued day and night, and that his sight had become very dim. The examination showed me that the patient was right, and had just grounds for his dissatisfaction. The inflammatory symptoms were as severe as before; and the abrasion of the epithelium had advanced downward across the center of the cornea. It formed a peculiar zig-zag line with short gray lines branching out alternately from each side at short intervals. Recognizing the significant character of this peculiar figure I at once gave the patient quinine. On the evening of the same day the patient already experienced great relief; the pain subsided, the profuse secretion of tears ceased, and he could open and move the eye without the slightest discomfort.

I saw the patient again on February 5, when the eye was free from all irritation and redness; the epithelium of the cornea was restored, but in its center there was a small star-shaped opacity which greatly impaired the sight. This opacity gradually grew smaller, but it was still perceptible when I saw the patient a few months since.

II. M. Br., aged thirty-five, conductor on railroad, came under my care on January 20. One week ago he had an attack of fever, which was followed by severe pain in the right side of the head and in the right eye. He could not open the eye, because every attempt caused a sharp cutting pain, and ordinary day-light was intolerable. The tears were running down the cheek in a continuous current. The ocular conjunctiva was engorged, and there was decided pericorneal injection. In the cornea, near its upper margin, a small abrasion of the epithelium was all the lesion I could discover. I did not notice anything unusual about this abrasion at that time, and prescribed atropine ointment and a bandage. After one week the patient returned. He had suffered great pain all the time, but especially at night it was exceedingly severe. He had lost his appetite, and his tongue was coated. The abrasion in the cornea had increased in length so as to extend almost across the entire cornea; it exhibited, then, very distinctly Kipp's characteristic symptoms; and, therefore, quinine was given at once. On the evening of the same day already

the pain had subsided, and the patient could sleep well. On the following day I observed a marked decrease of all the inflammatory symptoms. Three days later there was but a faint redness around the cornea; no lachrymation or photophobia. The epithelium was repaired along the line of ulceration, but its peculiar figure was still plainly outlined by an opacity. In the course of six weeks this opacity was cleared up.

Inasmuch as these opacities are slow in clearing, and particularly tenacious in the central portion of the cornea, an early recognition of the nature of this corneal trouble is of paramount importance, because the appropriate treatment can arrest the ulcerative process before it encroaches upon the center of the cornea. This point will be well illustrated by the following case:

Mrs. B., aged thirty-six years, had intermittent fever at different times. On the evening of Feb. 15, while in a warm room, she had a chill, followed by high fever. Next day, soon after breakfast, her left eye became very red and painful, and the tears kept running down the cheek. It was an intense, sharp pain, aggravated by the slightest movement of the eyeball or upper portion of the lid, so that the lady thought it was caused by a foreign body under the eyelid. Instead of a foreign body, however, I found in the upper nasal section of the left cornea, very near its margin, a minute, slightly raised, gray spot, like a phlyctenule, from which a fine gray linear opacity proceeded downward. This gray line was only one millim. long, but the most valuable symptom in the case; for at its lower end it branched out, thereby indicating the malarial keratitis in its incipient stage. I prescribed quinine (two grs. every two hours), and put a drop of atropine in the eye. After three doses of quinine were taken, the pain began to subside. The next day lachrymation, photophobia, pain and redness had disappeared, and two days later no trace of the corneal trouble could be discovered.

A PHYSICIAN of Erie, Pennsylvania, is training carrier pigeons for use in his practice. He leaves pigeons at places from which he wishes reports to be sent him.—*Boston Med. and Surg. Journal.*

Clinical Reports.

ARTICLE V.

FISTULA UPON THE FACE. By EUGENE S. TALBOT, M.D., DD.S.
Clinical Lecturer on Dental and Oral Surgery at Central Free
Dispensary, Rush Medical College. Reported by J. LONG.

This patient, Miss Sarah K—, has kindly consented to appear before you, in order to furnish an opportunity of studying an important lesion. I trust her case will so impress itself upon your minds as to assist you in treating like cases intelligently.

This young woman is an American, sixteen years of age, and in perfect health. Her parents are both living and healthy. She has been suffering from this trouble six years. It first manifested itself while the patient was living in New Orleans, by pain and swelling on the side of the face. A physician was summoned, who made an incision at the border of the jaw, anterior to the facial artery, where he had discovered pus. The pus discharged itself in large quantities, but the wound did not heal; pus constantly trickled out of the opening, and a permanent fistula was established. Three years afterward the family moved to Chicago, and the girl was treated by a physician who probed and burnt it at intervals for two years. At the end of that time, there being no improvement, she went to one of our hospitals, and while under the influence of ether an operation was performed, and the wound sewed up. When this failed to heal, she applied to a physician, who assured her the previous treatment was hasty; that she was scrofulous, and needed constitutional treatment. Last June, while under his care, she came into my office with a patient of mine. As I was about to dismiss my patient, my attention was called to her friend's disfigured face.

I requested her to open her mouth. Upon doing so, I found only the roots of the first and second molars posterior to the bicuspid, upon the right side of the inferior maxilla. I informed her that a cure could be effected by a removal of the roots. As she had not prepared herself for an operation, she postponed it for a time.

Two weeks ago she appeared again, and desired me to take the roots out. Upon removing the anterior root of the second molar, I found an abscess, the cause of all her suffering. You observe that the fistula has now entirely healed. A swollen face is indicative of bad teeth, so we can presume this trouble proceeds from the teeth, before further considering the condition of the health.

Observe this ugly contracted scar upon the border of the jaws, and question yourselves if it is ever justifiable to puncture an abscess upon the face. After ascertaining the offending tooth, if badly decayed, or a root, remove it, that the abscess may discharge itself through the opening in the jaw. If, for any reason, you should wish to lance the abscess first, open the mouth and draw the cheek out with the finger, then pass your bistoury between the mucous membrane and the bone, the blade resting against the jaw, thus avoiding the facial artery. The pus will pass into the mouth, and prevent the scarring of the face. Should a fistula be already established upon the face, examine the mouth, and if you succeed in finding the seat of the lesion, remove the tooth or root, and nature will heal the wound.

BEACONSFIELD'S DOCTORS.—Dr. Quinn has been called upon to defend himself before the College of Physicians for consulting with Dr. Kidd, who is an eclectic practitioner. Dr. Quinn explained that before seeing Lord Beaconsfield, he received a letter from Dr. Kidd, saying that he was not treating the case homœopathically, and that every direction and prescription of Dr. Quinn's would be faithfully carried out. From a letter of Dr. Kidd to the medical journals it appears that Sir William Jenner absolutely refused a consultation prior to the summoning of Dr. Quinn.—*Medical News*.

Society Reports.

ARTICLE VI.

CHICAGO MEDICAL SOCIETY. Stated Meeting, Oct. 17, 1881.

Dr. E. Ingals, President, in the Chair.

Dr. E. L. Holmes presented an abstract of the following remarkable cases, reported by him in Knapp's Archives of Ophthalmology :

DR. HOLMES' PAPER.

BLINDNESS—COLOR BLINDNESS DURING PREGNANCY.—Mrs. —, thirty-one years of age, who had always enjoyed excellent health, became quite suddenly ill in the sixth month of her first pregnancy. In the course of two weeks there appeared successively symptoms of albuminurea, pericardial effusion, orthopnoea, alight but quite general oedema, and total blindness. At this stage of the disease I was requested to make an ophthalmoscopic examination.

There was an extensive neuro-retinitis of each eye. The vessels of the retina and discs, as well as the contour of the discs, were almost entirely hidden from view by exudation. The discs themselves could only be recognized as quite white flocculent clouds. At the temporal side of the right eye was a detachment of a portion of the retina. There were dilatation of the pupils and a partial paralysis of the internal rectus of the eye.

As I had often observed total atrophy of the optic nerves and total blindness in cases with a history similar to this, I could only express a doubtful prognosis as regarded the restoration of sight.

The physicians in attendance urged the induction of premature labor. I recommended the use of tinct. ferri mur., pot. iod.,

pot. bromide and hyd. bichlor, in suitable doses, but did not see the patient again during her illness.

Six years after this I had an opportunity of examining this patient. The left eye was almost without abnormal appearance. Vision was perfect. In the right eye, at the seat of the detachment of the retina, was a small area of pigment deposit. Central vision was nearly extinct, with great obscurity of the surrounding field.

The patient informed me that for a period the remedies which I had advised had been taken, and subsequently strychnia. During three weeks she had been totally blind, and color blind three months. Gradually she was able to distinguish white and black, then yellow, red, brown, and finally green. Not till the end of five years was there perfect faculty of perceiving tints of green.

EYE-LASH IN THE ANTERIOR CHAMBER.—A German farmer thirty-five years of age, who had lost his right eye in childhood, received a punctured wound of the left cornea from a short piece of straw thrown from a threshing-machine. Blindness of the eye was the immediate result, occasioned probably by hæmorrhage in the anterior chamber. Little pain and inflammation followed the accident.

On examination, nine months after the injury, I observed a small opacity of the cornea at its upper and outer section. The lens was cataractous. Behind the opacity of the cornea was a rent in the iris. At the temporal portion of the anterior chamber was an eye-lash, which had evidently been carried through the cornea by the piece of straw. This was easily removed by means of a small blunt hook, through a minute incision in the cornea. A subsequent removal of the cataract restored excellent vision.

Dr. Holmes also reported the following case of anchylo-blephoran :

Last summer he was called to see a child four years old, in whom both eyelids were so covered with sores that it seemed impossible as well as inexpedient to separate them. The child had been vaccinated in the latter part of the winter ; from that time herpetic sores had broken out all over the skin ; but to what

extent the vaccination was accountable for the disease, Dr. H. could not determine. The patient presented all the indications of scrofula, and was put on appropriate treatment. He saw the case a few days ago, and noticed the following conditions: The skin had been restored, but the eyelids had not been separated. These he parted by inserting the points of scissors into a small incision made with a small bistoury between what had been the edges of the lids. The cornea of one eye was opaque, in the other quite transparent. There was some photophobia, Dr. Holmes remarked that sewing the eyelids together, and in due time separating them again, are recommended in xerophthalmia.

Dr. Hotz had met with cases of neuro-retinitis and blindness complicating pregnancy. Sight was restored in many cases, and as to the prognosis, he believed that it was much more favorable whenever blindness was dependent on the albuminous retinitis of pregnancy than on that of Bright's disease; and in the latter case it was always a precursor of death.

Dr. R. Tilley reported a case of strabismus depending on inflammation of the middle ear, which ceased after the discharge from the ear had stopped.

Dr. Holmes gave his assent to Dr. Hotz' remarks, but he added that rather a large proportion of cases of blindness from pregnancy had come under his observation which did not recover.

Dr. Hotz reported some cases of wounds of the cornea by straws from threshing-machines. It was a most frequent cause of injury among farmers. The pieces of straw should always be extracted, even when the cornea had to be cut into for that purpose, and the use of chloroform was advisable when required.

Dr. Ingals asked of the ophthalmologists present, what was the cause of asthenopia after labor? He had always supposed that it depended on straining of the ophthalmic nerves in the straining of labor, and on the congestion then liable to be present.

Dr. Holmes did not think that it was owing to congestion as much as to temporary weakness of the muscles of accommodation following exhaustion of the system at large. But this explanation was not satisfactory to the enquirer.

Dr. Tilley related an interesting case in a girl sixteen years of

age, who had not opened her eyes for two months when he first saw her. She had a tumor of the mammary gland, which was removed, and found to be a cystic sarcoma. Just as she recovered from under the influence of the anæsthetic, she opened her eyes. After four weeks, the same trouble returned, and the patient was again anæsthetized, with the same result. After two months there was marked internal strabismus, which was overcome by straining the eye in the opposite direction repeatedly.

Dr. Emma F. Gaston, six weeks ago, had seen a lady in apparent good health, who was suddenly attacked by irritation of the eyes while paring peaches. The inflammation had subsided, under proper treatment, in three days. Was there something irritating or poisonous about the peaches?

ARTICLE VII.

MICHIGAN STATE BOARD OF HEALTH.

The regular quarterly meeting of this Board was held Oct. 11, 1881. An interesting feature was a report by the Secretary relative to work of other State Boards of Health. The Secretary of the Michigan Board desires to continue to receive information from other Boards, by which these reports may be made quarterly.

A report relative to work of local boards of health showed increased activity on the part of local health authorities in the way of isolating those affected with communicable diseases, and enforcing the law requiring from householders and physicians notices of such diseases. In one city a physician had been fined \$100 for not reporting cases of diphtheria.

The revised document on the restriction and prevention of scarlet fever was adopted, and ordered published in English, Dutch and German. The consideration of this document involved a discussion of the question of recommending health officers to verify diagnoses of reported cases of diseases dangerous to the public health.

A circular giving general rules for the prevention of diphtheria, scarlet fever and small-pox was adopted. Forms were

adopted for annual reports by health officers and clerks of local boards of health, and by regular correspondents of the Board.

Dr. Avery, of Greenville, was requested to visit the overflowed district along the Maple river, in Gratiot county, and report to the Board.

Dr. Lyster, of Detroit, read a paper on syphilis in its relations to the public health. It dealt with the facts of the frequent communication of the contagium of syphilis, by direct and by indirect means, to innocent persons; also with the serious effects on individuals, and on the offspring of marriages, where one of the parents is thus blighted. He believed much might be done toward preventing this loathsome disease by wise legislation which shall restrict syphilis, and especially by collecting and disseminating among young men and other people facts relating to the nature and dangers of this disease.

Dr. Kellogg read a paper on the Relations of Preventable Sickness to Taxation, showing, by the reports of the boards of correction and charities, the abstracts of reports of county superintendents of the poor, the abstracts of statistical information relating to the insane, and the deaf, dumb and blind, and the vital statistics report, that more than 3,000 persons in Michigan are annually dependent on the State for support to a greater or less extent, in consequence of diseases preventable by the adoption of proper sanitary measures. The cost to the people of the State for the support of these persons is over \$40,000 annually, a portion of which is paid by every tax-payer. This is but a small part of the actual loss to the State. The number of deaths from preventable sickness in 1880 (*estimated* from returns by supervisors and assessors), was 4,585. Placing the value to the State of each human being at the low estimate of \$1,000, the aggregate loss by deaths from preventable sickness is over \$4,500,000. But to this must be added a further loss from sickness which did not terminate fatally. The statistics of the benefit societies of England show that for every person who dies three persons (on the average) are sick, throughout the year. This indicates a total annual loss of time from preventable illness on the part of more than 9,000 persons, to which should be added the expense of living, etc., certainly more than \$1,000,000. This gives about

\$5,666,000 as the total loss to this State from diseases generally conceded to be preventable. These figures are regarded as much too small, because of the few diseases included in this estimate as preventable (though it is generally conceded by sanitarians that at least nine-tenths of all ailments may readily be prevented), and because only sickness and deaths directly traceable to preventable causes have been included, while a large amount of sickness and many deaths are indirectly due to these causes. It is probable that preventable sickness might justly be charged with an expense to the State of not less than ten million dollars. Estimating the loss in the other States in the same ratio to the population, the aggregate loss to the whole United States is not less than three hundred million dollars annually, an amount which would pay the national debt in six years.

Mr. Parker, of Flint, presented a report of the public health section of the American Social Science Association at Saratoga.

The committee on sanitary survey of the State was requested to prepare schedules for the sanitary survey of cities, villages and townships.

Mr. Parker reported a proposed bill authorizing all boards of education to exclude from school persons infected with diphtheria, scarlet fever or small-pox, or living at houses where any person is infected with one of these diseases.

The Secretary was directed to prepare and issue a weekly bulletin of sickness in Michigan for such papers and medical journals as will publish it.

Dr. Baker was authorized to procure the services of an architect in the preparation of a circular on hospitals for communicable diseases.

Dr. Kellogg reported on the subject of criminal abortion. He and Dr. Hazlewood were requested to prepare a circular designed to collect facts on this subject.

ARTICLE VIII.

AMERICAN DERMATOLOGICAL ASSOCIATION: FIFTH ANNUAL MEETING. Held at Newport, R. I., August 30 and 31, and Sept. 1, 1881. Official Report of the Proceedings by the Secretary, Dr. ARTHUR VAN HARLINGEN, of PHILADELPHIA.

[CONCLUDED FROM NOVEMBER NUMBER.]

SECOND DAY.—MORNING SESSION.

Dr. ISAAC E. ATKINSON, of Baltimore, read a paper entitled

A Case of Tubercular Leprosy,

which was supplemented by a paper by Dr. I. Bermann, of Baltimore, upon the presence of the "bacillus lepræ" in the leprous infiltrations removed from the patient. The patient, a woman about 45 years old, was born of healthy parents, in Baltimore, and had never been beyond the limits of Maryland. She was married at sixteen. Her illness dated back about five years, and had followed a course typical of tubercular leprosy. The most interesting feature of the case was the probability of its having been acquired through contagion. This is the only case upon record of leprosy acquired by one who, born in Maryland, has never been beyond its limits. It can hardly, therefore, be an accidental coincidence that this woman, living for some time next door to a leper, whose case has been recorded by Dr. Rohé in the *Maryland Medical Journal* (1878), should get the disease without deriving it from him. It should be remembered that this man, who probably acquired his leprosy in Cuba, a young man, a native of Barbadoes, and a woman who probably acquired her disease in Louisiana (all reported by Rohé), comprise all the lepers that have been reported in Maryland for a number of years. It is evident that leprosy is one of the rarest of maladies in that State. The objection to evidence adduced in support of the contagiousness of leprosy has heretofore been that it has been collected in countries or localities where the disease prevails as an epidemic, and might arise from other causes. Here, however, is a case where the contagious influence was possible in a locality where leprosy not

only does not prevail, but has never, previously, been known to affect one whose life has been spent within its limits. Such conditions have never before been reported. The researches of Dr. Bermann into the histological pathology of the tubercles removed from the ear of this patient, enabled him to confirm the discoveries of Hauser, Neisser, Eklund, and others, of a bacterium as a constant attendant and probable cause of leprosy. Aniline colors being best for demonstrating bacteria, Bermann followed the prescribed methods and detected in the nuclei of the cells little bodies corresponding exactly with the bacillus lepræ. The process giving the most perfect results was that of staining the section in a one per cent. solution of aniline blue for a few seconds, washing in absolute alcohol several times, transferring to oil of cloves, again to the alcohol, then back to the oil of cloves, and finally mounting in balsam. The result of this method is, that the pigment is nearly removed from the protoplasm of the cell and leaves the bacillus deeply stained. Several prepared sections were exhibited.

On motion, it was agreed to postpone the discussion on Dr. Atkinson's paper until the other papers on the same subject should have been read.

DR. J. NEVINS HYDE, of Chicago, read a paper entitled

Study of a Case of Acute Tubercular Leprosy.

This paper was illustrated by a portrait in oil, representing the face of the patient.

DR. HYDE then read a paper by DR. H. D. SCHMIDT, of New Orleans, entitled

The Pathology of Leprosy.*

DR. LOUIS A. DUHRING, of Philadelphia, was announced to read a paper by MR. WM. FLETCHER, B.A., of Canada, entitled

Cases of Leprosy in Cape Breton, Nova Scotia.

Dr. Duhring apologized for the non-reception of Mr. Fletcher's communication, which had miscarried in the mail.

On motion of DR. WHITE, of Boston, it was agreed that Mr. Fletcher's paper be referred to Dr. Graham, of Toronto, the member of the Committee on Statistics in whose district the

* This paper will appear in the *Archives of Medicine*, October No.

cases had occurred, in order that it might be incorporated with the report of the committee.

SECOND DAY.—EVENING SESSION.

Discussion on Leprosy.

DR. WHITE, of Boston, said he was becoming more and more convinced of the contagiousness of leprosy through inoculation. The rise and spread of the disease in the Sandwich Islands seemed convincing as to contagiousness. He asked Dr. Atkinson if he could explain how contagion had occurred in his case.

DR. ATKINSON, of Baltimore, in reply to Dr. White, said that there were open sores upon the man B., which of course might be the means of contagion. Whether sexual intercourse had taken place between the parties he could not say, but every outward circumstance was against such a supposition. The woman was a person of the highest respectability.

DR. WHITE went on to say, regarding Dr. Hyde's paper, that he could not accept the case there reported as one of leprosy. The rapidity of development of the skin lesions was unprecedented. The picture accompanying the paper did not seem to him to present the appearance of leprosy. He would be more ready to accept the diagnosis after a careful microscopical examination of the lesions should have been made.

DR. GRAHAM, of Toronto, said that Dr. Keys, who had examined the lepers at Cape Breton, considered leprosy contagious only by inoculation. Drs. Bayard and Wilson were of the opinion that the disease is contagious.

DR. HEITZMANN, of New York, said, in reference to the microscopic preparations of leprosy made by Dr. Bermann and exhibited by Dr. Atkinson, that these specimens showed appearances which some observers considered parasites. The brief space of time available for the examination, and the method of mounting employed, prevented him from expressing a positive opinion, but he considered the supposed rods to be a part of the protoplasmic structure of the so-called cell. He thought staining agents delusive. As to Dr. Schmidt's elaborate paper, although this was valuable, it was based upon old-fashioned views of pathology. As we know that there are trophic centers every-

where in the central nervous system, and as many skin diseases appear in the light of recent investigations to be due to affections of the central nervous system, it was to this system, in his opinion, we must look for the origin of leprosy.

DR. DUHRING, of Philadelphia, said he had been much interested in hearing Dr. Atkinson's paper. In listening to the history of the case as given, he could see no point at which contagion could have taken place. The opinion of observers seems more and more inclining to the view of the contagiousness of leprosy. He agreed with Dr. White in thinking that contagion could only take place by inoculation. With regard to the case which had been reported by the President, Dr. Hyde, Dr. Duhring inclined to the belief that contagion could only have taken place by inoculation. With regard to Dr. Hyde's case, so far as he could judge from what he had heard of the history, he thought the diagnosis doubtful. He had never heard of a case of leprosy running such a rapid course. From what he had heard of the case, and especially from the accompanying picture, he was reminded of a case described by himself in a paper read before the Association a few years ago, under the name of "Inflammatory Fungoid Neoplasm." The color and appearance of the lesions in Dr. Hyde's case resembled closely those observed in Gubler's, Piffard's, and his own case.

THE PRESIDENT, DR. HYDE, of Chicago, said that he himself was not perfectly certain of the diagnosis. He should not come to a positive conclusion until a careful histological examination had been made of the lesions. He had at first regarded the case as one of that affection called by Dr. Heitzmann "myeloma," and of which Dr. Duhring's case was an instance. As to the acuteness of the disease, it must be remembered that it had in fact lasted a long time. Dr. Hyde then recapitulated the chief points in his description of the case, going to show that the lesions were characteristic to a considerable degree of leprosy.

DR. ATKINSON, said that the fortuitous concurrence of two cases, such as had been described in his paper, would seem almost impossible. The only case of leprosy which had ever originated in the State of Maryland was the one which he had described, and this had occurred in the immediate neighborhood of a former case. He thought it impossible to escape the conclusion that there was some connection between the

two cases, even though the history had failed to bring such connection to light. In his opinion, the hereditability of leprosy was doubtful. Regarding the question of the presence of "*bacillus lepræ*" in the microscopic specimens, he would only say that Dr. Bermann claims that he has found similar appearances to those described by Hansen and Ecklund, to which they gave that name.

DR. WIGGLESWORTH, of Boston, said that he had in his student days seen much leprosy, having traveled in Norway, Spain and Turkey for the purpose of studying the disease. He had, however, never seen a case of leprosy like the case described by Dr. Hyde. If Dr. Hyde could see Baretta's model of a case of "*mycosis fungoide*," he would see how closely it resembled his (Dr. Hyde's) case. Dr. Wigglesworth thought that many of these diseases might be grouped as lymphosarcoma, and went on to give the leading symptoms of Dr. Hyde's case and to point out the resemblance between it and lymphosarcoma.

DR. HYDE said he had been lead by reading Kaposi's paper on a case of acute leprosy to incline to this diagnosis in the case reported.

DR. DUHRING said he regarded Baretta's model, to which Dr. Wigglesworth had alluded, as representing the same disease as his inflammatory fungoid neoplasm. He referred to a case of leprosy which he had seen where the course was very obscure. It had occurred in a Cuban gentleman who had traveled much, and in whom it had shown itself at the age of thirty, the patient dying five years later.

DR. WIGGLESWORTH recalled the case of an American sailor who visited various ports of South America, and returning showed symptoms of leprosy seven years later. He thought the disease might have been contracted in this case by inoculation, by cohabitation, etc.

DR. EDWARD WIGGLESWORTH, of Boston, read a paper on

Buccal Ulcerations of Constitutional Origin.

These are usually syphilitic in nature, though they are not always so. The fact that syphilitic ulcerations sometimes occur in persons above all suspicion of sexual immorality makes it doubly important for the general practitioner to recognize them by their appearance without asking too many questions. The only maladies likely to occasion doubt in regard to diagnosis

are lupus and tuberculosis, and occasionally epithelioma. In cases of lupus the local treatment is identical with that adapted to ulcerations due to syphilis. When tuberculosis exists with ulcerations of the fauces or palate, or both, the pulmonary symptoms are almost always far advanced, and even when they cannot be detected the patient is sure to die of tuberculosis, more or less general, and treatment is practically useless. The possibility, however, that the case may be one or either of these diseases should always make the practitioner careful in expressing an opinion and considerate in his language, for the peace of a whole family is often at stake.

The writer then went on to give notes of a series of illustrative cases, and followed these by some general remarks on the treatment, particularly of syphilitic ulcerations. Stimulants are better than caustics, and, indeed, much harm is done by the indiscriminate use of the latter. The parts must be kept well cleansed, and this alone, when the ulceration is in the pharynx, gives great relief. The writer recommended the following solution for atomization :

℞ Tinct. iodini, pts. v;
Glycerinæ, pts. x;
Aquæ, pts. xxx.—M.

The most convenient instrument to use is that known as Fulgraff's, which is made of hard rubber, with nozzles of various shapes—one to send a stream of spray up behind the soft palate, one for a horizontal stream, and one for use in the larynx. The bottle should be kept nearly full, so that the stream may not be kept up longer than is intended, owing to compressed air remaining in the bottle. Three or four applications of twenty seconds each will be sufficient to thoroughly cleanse and stimulate any ordinary ulceration.

After the use of the spray, iodoform should be applied to the ulcer with a camel's hair pencil, or blown on to it by an insufflator. A little powdered gum arabic mixed with the iodoform causes it to adhere better. Iodoform can also be conveniently deposited on the nasal mucous membrane by letting the patient inhale a saturated solution of the drug in ether.

Some cases require the use of the nasal douche with disinfectants. A convenient formula is one teaspoonful of chlorate of potassium with one-third as much carbonate of sodium and

fifteen drops of a five-per-cent. solution of permanganate of potassium, all in a quart of water at 25 degrees C., used with a fountain syringe. It is well to remember that a spray or a powder carried by a current of air may be used by blowing it into one nostril while the patient breathes through the open mouth. The spray then passes through the vault of the pharynx and escapes by the other nostril. If desirable, by instructing the patient to breathe through the nose, a powder may be blown into the larynx through the nostril.

Constitutional treatment is of course necessary. The lesions occurring late in the disease—from the second to the twentieth year, and usually in cachectic subjects—iodine must play a more important part than mercury. Cod-liver oil, ferric iodide, potassic iodide, iodine spray, and iodoform—these are the great remedies. Of course all hygienic measures must be united with these.

DR. F. B. GREENOUGH, of Boston, thought that although local treatment was beneficial in the class of cases described, yet keeping the parts clean, and constitutional (mixed) treatment was as good or better.

DR. WIGGLESWORTH said he thought a cure could be effected more rapidly by employing local treatment in addition to cleanliness and constitutional measures.

DR. GREENOUGH said he had found iodoform a very useful application. He had used it successfully in one case of epithelioma.

DR. HEITZMANN, of New York, asked Dr. Wigglesworth if he had not found much difficulty in distinguishing between syphilis and tuberculosis of the throat. He adduced several personal instances where the diagnosis was very difficult.

DR. WIGGLESWORTH said he often found the diagnosis between syphilitic and tubercular ulceration of the throat very difficult. In answer to a question by the President he said the form of iodide of iron he preferred was the *syrupus ferri iodidi* of the pharmacopœia.

DR. ATKINSON, of Baltimore, said he had been lead by a remark of Kaposi to attribute much weight to certain symptoms in the diagnosis of these affections; *e. g.*, that lupus is not so apt as syphilis to attack the bones.

DR. WIGGLESWORTH said that lupus does attack the bones, although, to be sure, not often.

DR. ATKINSON, continuing, said it was often difficult to check the ulcer of the uvula before perforation should have taken place. He considered constitutional treatment the most important in these cases. He had found most trouble in the effort to cure old recurring cases.

The PRESIDENT, DR. HYDE, of Chicago, in closing the discussion, added his testimony to that already given on the great importance of cleanliness. It was a *sine quâ non* in every case, whatever form of treatment might be adopted.

THIRD DAY.—MORNING SESSION.

The report of the Committee on Statistics was read as follows :

REPORT OF THE COMMITTEE ON STATISTICS FOR THE YEAR ENDING JUNE 30, 1881.

TABLE I.

District 1.—Boston Cases . .	{ Dispensary . . 2,558 Private . . . 706 }	Total . . 3,264
District 2.—New York Cases .	{ Dispensary . . 3,295 Private . . . 542 }	Total . . 3,837
District 4.—Philadelphia Cases	{ Dispensary . . 1,010 Private . . . 98 }	Total . . 1,108
District 4.—Baltimore Cases .	{ Dispensary . . 503 Private . . . 0 }	Total . . . 503
District 5.—St. Louis Cases .	{ Dispensary . . 0 Private . . . 264 }	Total . . . 264
District 6.—Chicago Cases . .	{ Dispensary . . 1,069 Private . . . 1,031 }	Total . . 2,100
Total Dispensary Cases . . 8,435		
Total Private Cases . . . 2,641		
		11,076

TABLE II.

Showing the Returns from the respective Districts.

	Private Cases.	Dispensary Cases.	Total Cases.	Boston.	New York.	Philadelphia.	Baltimore.	St. Louis.	Chicago.
Class I. Disorders of the Glands.									
1. <i>Of the Sweat Glands.</i>									
Hyperidrosis.....	4	14	18		11	3	1	1	2
Miliaria crystallina.....	9	11	20			6		3	11
Anidrosis.....	1		1						1
Bromidrosis.....	2	3	5						5
2. <i>Of the Sebaceous Glands.</i>									
Seborrhoea: a. oleosa; b. sicca.....	82	165	247	83	56	30	17	6	55
Comedo.....	34	90	124	24	59	9		4	28
Cyst: a. Milium; b. Wen.....	23	18	41	7	12	8		3	11
Molluscum sebaceum.....	10	10	20	5	5			1	9
Diminished secretion.....									
Class II. Inflammations.									
Exanthemata.....	107	122	229	16	28	3	6		176
Erythema simplex.....	29	58	87	10	31	8	5	2	31
Erythema multiforme: a. papulosum; b. bullosum; c. nodosum.....	28	96	124	40	40	26	5		13
Urticaria.....	42	302	344	75	174	54	8		33
* Dermatitis: a. traumatica; b. venenata; c. calorica.....	57	183	240	42	109	36	15	4	34
Erysipelas.....	32	103	135	33	56	6	3		37
Furuncle.....	48	183	231	50	106	25	12	6	32
Anthrax.....	8	1	9		3				6
Phlegmona diffusa.....	6	12	18	6	3		3		6
Pustula maligna.....									
Herpes: a. facialis; b. progentialis.....	69	112	181	40	58	11	4	2	66
Herpes zoster.....	21	127	148	48	46	17	8	2	28
Psoriasis.....	92	250	342	83	128	47	11	4	69
Pityriasis rubra.....		1	1						1
Lichen: a. planus; b. ruber.....	5	21	26	1	12	2	3		8
Eczema: a. erythematosum; b. papulosum; c. vesiculosum; d. madidans; e. pustulosum; f. rubrum; g. squamosum.....	623	2880	3503	1231	1226	370	201	77	398
Prurigo.....		1	1		1				
Acne.....	226	430	656	270	170	69	22	26	99
Impetigo.....	19	146	165	67	37	25			36
Impetigo contagiosa.....	8	52	60	12	1	23	6	1	17
Impetigo herpetiformis.....									
Ecthyma.....	5	65	70	33	24	5	1		7
Pemphigus.....	5	16	21	3	6	3	1		8
Class III. Hæmorrhages.									
Purpura: a. simplex; b. hæmorrhagica.....	11	43	54	8	24	7	2	1	12
Class IV. Hypertrophies.									
1. <i>Of Pigment.</i>									
Lentigo.....	3	4	7	4				3	
Chloasma: a. locale; b. universale.....	32	28	60	18	22		3	1	13
2. <i>Of Epidermal and Papillary Layers.</i>									
Keratosis: a. pilaris; b. senilis.....	15	8	23	10	2	2		3	6
Callositas.....									
Clavus.....		6	6	1	2	1	2		
Cornu cutaneum.....	41	67	108	37	26	8	5	4	28
Verruca.....									
Verruca neogenica.....									
Xerosis.....	3	6	9	8				1	
Ichthyosis.....	7	14	21	2	6	3	2		8
Of Nail.....	6	3	9	1	2	2		3	1
Hirsuties.....	30	2	32	12	3			15	2
3. <i>Of Connective Tissue.</i>									
Scleroderma.....	2	3	5	2	2				1
Sclerema neonatorum.....									

* Indicating affections of this class not properly included under other titles.

Table showing the Returns from the respective Districts.

	Private Cases.	Dispensary Cases.	Total.	Boston.	New York.	Philadelphia.	Baltimore.	St. Louis.	Chicago.
Morphea.....	5	5	5		3			1	1
Elephantiasis Arabum.....	5	5	4	1					
Rosacea: a. erythematosa; b. hypertrophica.	82	77	159	22	74	19	2	14	28
Framboesia.....									
Class V. Atrophies.									
1. <i>Of Pigment.</i>									
Leucoderma.....	4	6	10		6			1	3
Albinismus.....		2	2				2		
Vitiligo.....	7	13	20	6	1	6	3		4
Canities.....	2	1	3	2	1				
2. <i>Of Hair.</i>									
Alopecia.....	68	22	90	62	14	4	2	3	5
Alopecia areata.....	34	31	65	29	19	4	1	1	11
Alopecia furfuracea.....	47	15	62	44	4	3	4		7
Atrophia pilorum propria.....									
3. <i>Of Nail.</i>		3	3	1	1	1			
4. <i>Of Outis.</i>									
Atrophia senilis.....									
Atrophia maculosa et striata.....	2		2					1	1
Class VI. New Growths.									
1. <i>Of Connective Tissue.</i>									
Keloid.....	4	11	15	3	4	2	4	1	1
Cicatrix.....	2	8	10	2	4		1	1	2
Fibroma.....		1	1						1
Neuroma.....									
Xanthoma.....	3	2	5	1	4				
2. <i>Of Vessels.</i>									
Angioma.....	21	26	47	16	7	3	4	4	13
Angioma pigmentosum et atrophicum.....	1		1		1				
Angioma cavernosum.....		1	1	1					
Lymphangioma.....	1	1	2		1	1			
3. <i>Of Granulation Tissue.</i>									
Rhino-scleroma.....									
Lupus erythematosus.....	12	17	29	7	10	2		1	9
Lupus vulgaris.....	15	36	51	8	13	8	2	6	14
Scrofuloderma.....	7	35	42	11	7	4	4		16
Syphiloderma: a. erythematosum; b. papulosum; c. pustulosum; d. tuberculosum; e. gummatosum.....	283	982	1265	273	454	85	23	16	414
Lepra: a. tuberosa; b. maculosa; c. anæsthetica.....	5	2	7	1	1		1		4
Carcinoma.....	36	51	87	21	27	10	6	5	18
Sarcoma.....		1	1		1				
Class VII. Ulcers.	48	385	433	97	202	19	24	5	86
Class VIII. Neuroses.									
Hyperæsthesia: a. Pruritus; b. Dermatalgia.	72	202	274	75	82	37	25	16	39
Anæsthesia.....	2	2	4				1	1	2
Class IX. Parasitic Affections.									
1. <i>Vegetable.</i>									
Tinea favosa.....	2	23	25	4	13	2	2		4
Tinea trichophytina: a. circinata; b. tonsurans; c. sycosis.....	91	258	349	84	115	22	20	11	97
Tinea versicolor.....	26	98	124	23	44	15	8	3	31
2. <i>Animal.</i>									
Scabies.....	7	127	134	22	64	11	6		31
Pediculosis capillitii.....	3	213	216	110	51	24	7		24
Pediculosis corporis.....	3	218	221	51	118	10			42
Pediculosis pubis.....	11	34	46	11	12	4			19

Special Report on Leprosy.

New Brunswick.—Dr. Graham, of Toronto, presented a brief history of the progress of leprosy in New Brunswick, drawn from the annual reports to the legislature of that Province for the last thirty years, with a valuable abstract of the report of a medical commission made in the year 1848 by Drs. Bayard and Wilson.

California.—Dr. Hyde presented the following account of the disease upon the Pacific Coast :

TWENTY-SIXTH ST. HOSPITAL,
SAN FRANCISCO, CAL., JULY 10, 1881.

JAMES NEVINS HYDE, M.D.,

President Am. Derm. Association.

MY DEAR DOCTOR :—Your favor of last month found me busily engaged on the annual report, a fact for which I would have you credit me, as against my neglect in allowing your communication to remain so long unanswered. In regard to the subject of your inquiry, leprosy, I shall be but too happy to furnish you with all the data attainable from our records, at the same time would remind you of the fact that the subjects of the disease, with one exception, have been Mongolians, and unable to give other than the most meagre account of themselves, and we are often compelled to rely upon conjecture in fixing the age of the patient.

I find by reference to the records that the first leper, *Hoy Tong*, was admitted July the 5th, 1871, and that he died on 29th of Sept., 1875.

Since that date fifty-one additional cases have been received—48 males, 3 females—making a total of fifty-two cases to account for. The hospital was designed for the treatment of small-pox exclusively, and the leprosic have been admitted only when found necessary to relieve other public institutions, or perhaps the streets of their presence.

How Disposed of.—Three invoices, aggregating forty-five (45), have been sent by the authorities to China. Three (3) have died of the disease. One (1) from accidental causes. One (1) escaped. One (1) committed suicide, and one (1), a Caucasian, is still an inmate.

Ages of the Patients.

Between 15 and 20.....	4
Between 20 and 25.....	9
Between 25 and 30.....	17
Between 30 and 40.....	13
Between 40 and 50.....	9

No record has been kept of the duration of the disease, at the date of admission, nor of the length of time the patient had been in the country—omissions much to be regretted, and doubtless due to the fact that their detention here was but temporary, and pending shipment. It is not assumption to say they were to appearances healthy when they entered the port, the Chinese Six Companies being too keenly awake to their own interest to import unproductive labor, but that they were the subjects of the disease in its incubative stage at the date of shipment is an inference irresistible.

Type of Disease.

Anesthetic	14
Tubercular	9
Mixed	5
Not Given	24

Accompanying these notes you will find a photographic group of lepers, fourteen in number. They comprise the second shipment made to China, June the 2d, 1880. You will also find two cabinet scenes from the same group—fine specimens of the tubercular type of the disease just prior to the commencement of the ulcerative process.

Duration of the Disease.—From personal observation I can give no information on this point, having seen but one fatal case. In March, 1876, when I joined the hospital, it contained a young Chinaman then convalescent from varioloid. His face was covered with small tubercles (non-ulcerative), usually seen in the convalescent stage of that disease, but they did not become absorbed. He was discharged in April, but not till the similarity of these tubercles to early leprosy had been the subject of comment. On the 28th of July, 1879, he was re-admitted with tuberculous leprosy fully developed, and he died of phthisis on the 20th of the following March, four years from the first appearance of the disease. For the two years next succeeding his discharge from the hospital in 1876, he had been laboriously employed as a miner.

Per contra *Fo Lim* and *To Gan* were both inmates of the hospital two years or more; were both the subjects of the disease several years prior to admission, and were in better physical condition when discharged than when admitted. The former had been eight years in the country and four or five years the subject of the disease. Ulceration had commenced in the fossa between the lower lip and prominence of the chin, but under a more generous diet than he had been accustomed to, it soon healed, and his general health continued good during the period of his stay in the hospital.

For the past two years alimentation has been our only treatment. The leper requires good nutrition and wants it often. The ration of the American army is insufficient for his support until the last stage of the disease has been reached.

General Prevalence.—Any opinion as to the number of these unfortunates now in the city would be mere conjecture. I have seen none out of the Chinese quarter, and without police aid it would be useless to look for it there. It is less general than is commonly believed, yet the fact is a significant one, that, on the 2d of June, every known leper in the city was shipped for China, and before the end of the year fourteen new cases have accumulated upon our hands. The Chinese Consul claims hospital rights for these people; the authorities resist the claim, and the courts are now adjudicating upon the question.

Is it Contagious?—English writers in India say it is not, or at least not in the sense in which the term is usually employed; but the Chinaman who has been familiar with the disease and its traditions for centuries, avoids the leper with great care, and will stand for hours rather than occupy a seat that has been vacated by one.

Heredity.—The leper maintains the most profound silence upon this subject. I have seen but one who admitted its existence as a family taint, and he would, it is probable, have denied it, had not the inquiry been made prior to a conference with his fellows in the lazarette.

Incubation.—*Ah Yong* had been five years, *Ah Tong* three years, and *Lee Fong* (in whom the disease had but recently declared itself) five years in the country before any symptom appeared. *Tu Wuog*, for several years a marine fireman in the employ of Pacific Mail Co., between this port and the Orient, a man of fine physique, and well nourished, developed the disease

at 32, after five years of generous diet on board an American steamship, and surrounded by healthful sanitary conditions. *Thos. Stanton*, present age 47, after a residence of nine years in Madras, Ceylon and Bombay, sailed from Calcutta for New York, December 24, 1870. For three and a half years after his arrival he remained in good health and worked as stone-mason's assistant in Cleveland, Nashville, and other western cities. In the autumn of 1874, becoming the subject of rheumatic pains, he concluded to seek a milder climate, and going to Louisiana he remained there and in other of the cotton States till the spring of 1878. During his stay in the South he had worked a portion of the time, "but did not feel well at all;" and, although he had no medical advice, he "knew it must be that his blood was out of order, or these pimples wouldn't have come out on his face" (leprosic tubercles). Concluding to work his way back to Bombay, he reached Sacramento during the vintage of '78, and obtained employment in the drying-room of a raisin factory. He was the only white man in the room. During the second day his fellow-workmen discontinued their work and declined to resume until the foreman was discharged. The Chinamen had recognized the disease—more successful in this particular than one of the visiting surgeons of a hospital, who, for a period of six months subsequent, treated him as a syphilitic. He was admitted to this hospital March 4, 1880, with fully developed leprosy of the mixed variety.

Six months since his appetite failed him. The numbness in the toes, of which he had formerly complained, gradually extended up the feet; his voice became husky, cough troublesome; the muscles are wasting, the toes sloughing; he has become very irritable, and he will, it is probable, succumb to the disease during the current year. In this instance, the only one in which I have been able to obtain a detailed history, the earliest symptom of the disease made its appearance four years after leaving the locality where it is assumed to have been acquired.

Symptoms.—No better description need be looked for than that given by Dr. Tilbury Fox, on pages 312 and 313 of his able work on the skin. Of the functional lesion in the parts supplied by the ulnar nerve, I will state that in the group of fourteen I send you it was strongly marked in nine, and a very

good idea of the changes which followed can be obtained by examining them (slightly magnified) in the two arm views.

Before closing, I desire to express my regret that I am not able to procure for you photographs of the cabinet size, but I find they are out of print and the negatives lost or rendered useless.

I am, my dear Doctor, respectfully your obd't servant,

JOHN W. FOYE, M.D.

In *Oregon*, also, the disease has appeared among the Chinese immigrants, steps having been taken in February last by the authorities to remove five lepers from the Portland poor-farm and to re-ship them to China.

DR. CHARLES HEITZMANN, of New York, read a paper entitled

Clinical Experience in the Use of the Solution of Oxysulphuret of Calcium.

This solution, commonly called after the name of Dr. Vlemingcx, who first introduced its use, has been long known in dermatology. It has been used chiefly for the treatment of scabies, and by Hebra for the removal of patches of psoriasis.

The solution of oxysulphuret of calcium is prepared as follows: Take one part of quicklime, two parts of precipitated sulphur, and twenty parts of water; boil in a china or glass vessel to the remnant of twelve parts, and filter. The dark-brown liquid resultant has a disagreeable smell and is a strong caustic. Oil of anise will in part obviate the objectionable smell. The solution may be diluted with water or alcohol, the latter precipitating the sulphur, but not materially altering its composition.

The writer had used it in thirty cases of psoriasis of the body, the solution being applied in full strength or diluted, according to the susceptibility of the patient's skin, being rubbed into the patches with a piece of flannel until slight stinging ensues. Care must be taken not to irritate the skin by a too strong solution. Tar ointment is afterward to be rubbed into the patches.

The writer had employed the solution of oxysulphuret of calcium in ninety-five cases of acne disseminata, of which seventy-five were cured; in twelve the result was unknown, and in three cases the disease was aggravated. The solution is in these cases to be diluted with three to six parts of water, rubbed into the face with a flannel rag, and left on over night.

The next morning the face is washed with soap and water. The solution may be employed of greater strength as the patient becomes accustomed to it. Cold-cream may be used to disguise the slight desquamation.

The writer had also employed the solution in a few cases of chronic eczema, fourteen in all. In four cases of chronic eczema of the scrotum, the application of dilute Vlemingckx's solution, gradually strengthened, resulted in a cure.

Thirty-six cases of rosacea were treated by the writer, with good result in twenty-nine cases.

A limited number of cases of tinea tonsurans were treated by means of the solution, but without beneficial result. Eleven cases of tinea versicolor were treated, with brilliant success in every instance, the solution being used in half strength. It appears to be the safest and surest remedy in this affection.

Finally, six cases of scabies were treated, all successfully.

DR. F. B. GREENOUGH, of Boston, asked the writer if the solution was to be applied over the whole face in acne, or to the lesions only. Dr. Heitzmann said it was to be applied over the whole face.

DR. WHITE, of Boston, said he had formerly used Vlemingckx's solution a great deal, but of late years had used it but little. Patients object to the remedy, and it is difficult to get them to use it long enough to do good. He was at present accustomed to use other preparations of sulphur which are less objectionable. Vlemingckx's solution is apt to produce excessive action when used strong enough to be beneficial. He had never used it in acne, and thought it doubtful if he ever should. His patients, mostly young ladies would, he was quite sure, object to the employment of so disagreeable a remedy, and moreover metallic articles in the neighborhood are apt to be affected by the fumes, which makes it very objectionable. He would, however, agree with Dr. Heitzmann as to its value in acne. As regarded the use of sulphur preparations in the treatment of pigment anomalies (hypertrophy), Dr. White did not consider them efficacious; much less so, certainly, than other remedies.

DR. HEITZMANN said, in reply to Dr. White, that thin-skinned persons did not, in his experience, object to the use of Vlemingckx's solution, and inquired what alkaline sulphur remedy Dr. White used.

DR. WHITE said that he sometimes used sulphur and *sapo viridis*.

DR. HEITZMANN said he had tried sulphuret of potassium, but had not obtained good results.

DR. WIGGLESWORTH, of Boston, said that the mechanical, as well as the medicinal, treatment of skin diseases should always be kept in mind as of importance. He expressed his preference for sulphur ointments as bland and soothing. He was also accustomed to use on occasions carbonate of potassium and sulphur.

DR. DUHRING, of Philadelphia, inquired of Dr. Heitzmann regarding the amount of scaling in cases of acne treated by Vlemingckx's solution, and asked if he followed it up with bland ointments.

DR. HEITZMANN replied that the amount of scaling depended very much on the character of the given case. He always began with a diluted solution, gradually increasing its strength.

DR. HEITZMANN then read a paper entitled

Remarks on Akido-galvano-cautery (Electrolysis) for Epilation.

Referring to a paper by himself, giving experiments in the injection of caustic liquids for the removal of superfluous hairs, and read at a previous meeting of the Association, the writer said that these experiments had resulted unsatisfactorily in the case reported. The lady had since then consulted prominent Viennese dermatologists, who assured her that no cure could be effected in her case, and that any one who should promise such a cure would be a charlatan.

The discussion on that paper by members of the Association present at the time, had re-drawn the writer's attention to the method termed by its inventors, Drs. Hardaway and Michel, of St. Louis, "Electrolysis," and he had employed it in the case referred to. The term "electrolysis" is objectionable, as it involves the idea of an electric action upon the tissues without thermic influence. The existence of such an action has, however, as yet not been proved. What we use for the destruction of the hair bulb is, in reality, the galvano-cautery. The action being induced by a delicate needle, the writer suggested prefixing the word "Akis," and designating the method "Akido-galvano-cautery," or "Akido-cautery." The credit of the invention of the method belongs to Dr. Michel, of St. Louis, and it was first

applied to the destruction of the hairs of the face by Dr. Hardaway, of St. Louis (in a paper read before this Association in 1878). Dr. George Fox deserves credit for certain improvements in the method.

Dr. Heitzmann, the writer, uses the "chloride of silver" battery of the "Electro-medical Company," of Union Square, New York, consisting of twenty cells in a perfectly closed case, neat-looking, easily transportable, and needing no filling for one to two years. He finds five or six cells sufficient, and the operation successful and almost painless; several minutes, however, being required to destroy each hair bulb. The negative pole, armed with a dentist's brooch, is applied to the bottom of the hair pouch, the positive pole, armed with a wet sponge, being held in the patient's hand. Very soon after the current is closed, a whitish discoloration is noticed around the needle, then flakes of epidermis become detached from the mouth of the hair pouch, a little frothing appears, with marked redness about the needle. Repeated gentle trials with the tweezers finally succeed in detaching the hair without the least force, the root of the extracted hair looking as if burned through, and slightly discolored. The hair pouch is gaping, and a second insertion of the needle into the pouch for a few moments is an additional security for the complete eradication of stronger hairs. A wheal appears immediately after the operation, and a small papula or pustule on the succeeding days, which soon disappears without leaving a noteworthy disfiguration.

Some hairs return again. These are usually sufficiently large within three weeks to justify a second operation.

During the winter months of 1880-81 Dr. Heitzmann removed 450 hairs from the patient operated upon, leaving only downy hairs behind. Three months later only six of these had again reappeared. The result of this new American method is brilliant indeed, and honor is due to our brethren of the Dermatological Association who have initiated and perfected the procedure.

DR. WHITE, of Boston, questioned the accuracy of Dr. Heitzmann's statement that the influence of the cautery is purely thermal. He thought it electrolytic. He (Dr. White) had operated by the method described in ten cases during the past year. He had not succeeded so well in his earlier cases as in the more recent ones. He was accustomed to employ a stronger current than Dr. Heitzmann had used—fifteen cells. He

usually placed the positive pole as near as possible to the needle, and kept it under his own control. With all precautions, many cases must be gone over again after three weeks. Dr. White said that, in his experience, scars are usually left; he thought that usually essential to the cure. In some cases, however, he did not find a scar.

DR. DUHRING, of Philadelphia, said, in reference to Dr. White's opinion with regard to the action of the cauter, that he thought it both thermic and electrolytic. He had seen the needle brought to a red heat. He had, after a prolonged trial, abandoned the use of the dental nerve brooch, and now used a fine cambric needle, ground down by a skillful workman. He had devised a light and convenient instrument, made by Fleming, of Philadelphia, for holding the needle, and which he had described and figured in the July number of the *American Journal of the Medical Sciences*. He thought that the operation demanded peculiar manual skill, and considered himself as succeeding at present much better than formerly. Sometimes he found scarring to result, and sometimes not.

DR. WHITE said he never employed thermal influence. His needle was always cold to the touch. He had had no trouble with the dental brooch, which was flexible and elastic. He asked if Dr. Duhring's brooches had been of foreign manufacture.

DR. DUHRING said they had been of foreign make. He inquired if Dr. White did not find pain caused by applying the positive and negative poles so near each other.

DR. WHITE said that he had not found pain result from the procedure mentioned. He had used the chloride of silver battery employed by Dr. Heitzmann, and was well pleased with its performance. He inquired if any of the members had observed the growth of new hairs as a result of the application of the positive pole to the skin.

None of the members had observed this phenomenon.

REPORT OF THE COMMITTEE ON NOMENCLATURE AND CLASSIFICATION

The Committee on Nomenclature and Classification reported that no changes were suggested. On motion the report was accepted.

THE REPORT OF THE SPECIAL COMMITTEE ON MICROSCOPIC
EXAMINATION OF A SPECIMEN OF AINNUM

was then read by the Chairman, DR. HEITZMANN, of New York, as follows :

The specimen submitted to your committee consisted of the small toe of a negro from Brazil, which by constriction on the level of the fold between the toe and the foot, had been separated from the body. It represents an ovoid mass, about two inches in longitudinal, and one and a half inches in transverse diameter, of a dark brown color, the surface being nodulated, and especially on the distal end supplied with distinct rows of papillæ. On the dorsal surface of the distal end there is a well-preserved nail; in the midst of the plantar surface there is a roundish field, one quarter inch in diameter, uncolored and uneven, the place where the pedicle was located.

Frontal and sagittal sections made through this mass, to the naked eyed exhibit a very broad epithelial investment all around, except on the place of the former pedicle. The epithelial investment consists of an outer, dark brown, and an inner, colorless layer, the boundary line between these two portions being highly scalloped. The papillary layer is enlarged to the diameter of two millimeters, and the papillæ are so much elongated as to be plainly perceptible to the naked eye.

The main bulk of the toe is composed of coarse bundles of connective tissue in a reticular arrangement, and the meshes inclosed by the bundles hold some fat. The layer next to the bone, evidently the thickened periosteum, is produced by a very dense fibrous tissue, without reticular structure. On the frontal section the phalanges, of which only the second and the third are imbedded in the mass of the toe, look entirely displaced, so as to assume a direction outward and upward, in an acute angle of nearly 45°. The diameters of the phalanges are not noticeably changed. On the outer surface of the phalanges there is a broad layer of tendinous tissue attached to the periosteum. This tendon occupies the central portion of the place of detachment, where it terminates in a rounded-off extremity, a little over one millimeter in width. Around the end of the tendon both the derma and the epithelial layers terminate with sloping ends, which slightly protrude around the tendon.

Sections made in a vertical direction with the razor, under the

microscope exhibited a considerable widening of the epithelial layers, which consist of several strata of alternating horny and protoplasmic epithelia. In the horny portion there are scattered fat-globules in moderate quantity. The papillæ are very much elongated, though not noticeably widened in their transverse diameter except on their bases. Horizontal sections give beautiful figures of the transversely-cut papillæ, and the very broad, concentrically arranged layers of the epithelia.

The derma, which, as seen by the naked eye, is the formation largely prevailing, consists of coarse bundles of fibrous connective tissue, in a very irregular arrangement. The meshes left between the bundles hold either fat-globules or a myxomatous connective tissue, crowded with medullary or inflammatory corpuscles. Such corpuscles are visible throughout the fibrous portion also, but here in a much smaller number. Scanty remnants of the coils of the sudoriparous glands are visible, and also ducts of such glands. The arteries traversing the derma are surrounded by a very distinct, as a rule, broadened layer of smooth muscles, while their calibre, on an average, is narrowed. The veins, on the contrary, are without exception considerably enlarged and completely filled with blood. The periosteum ensheathing the phalanges consists of a dense fibrous connective tissue, whose bundles are rectangularly interlaced and hold a relatively small number of inflammatory corpuscles. The portion of the periosteum nearest to the bone is to a great extent myxomatous in nature, and in some places crowded with inflammatory corpuscles.

The surface of the bone, and also the trabeculæ of the cancellous portion, are irregularly jagged, supplied with lesions and bay-like excavations, which either are filled with a fully developed connective tissue, or with masses of inflammatory corpuscles. The picture reminds of the cementum of deciduous teeth, whose surface, at the time when the tooth becomes reduced, melted down, looks in a very similar way. The medullary spaces of the cancellous bony tissue are filled either with fat-globules, or with a myxomatous connective tissue, the veins being also dilated and engorged with blood-corpuscles.

The articular cartilage on the lower extremity of the second phalanx is considerably reduced in size. Its surface on many places looks crowded like that of the bone, and the bay-like

excavations are filled either with inflammatory corpuscles or a fully developed connective tissue.

Lastly, it is worth mentioning, that on some places in the fat-tissue the fat-globules are separated from each other by large spaces, filled with a finely granular mass, namely, coagulated albumen. This image corresponds to that of œdema.

The result of the researches of your committee is, that the specimen of ainhum fully answers the process that we are accustomed to call hypertrophy or hyperplasia of the tissues due to a chronic inflammatory process. The hyperplasia involves both the epithelial investment of the skin and the derma, while the bony and cartilaginous tissue, due to the slow inflammation, is gradually reduced into fibrous connective tissue. As to the cause of this marked hyperplasia of the toe, your committee submit the following suggestions :

The description of the process by Drs. Da Silva Lima and J. Nevins Hyde, draws attention to a hard constricting ring on the plantar surface of the foot in the fold, which demarcates the toe from the sole of the foot. This fold strictly corresponds to the articulation of the first with the second phalanx of the toe, and a gradual constriction of the tissues necessarily will lead to a separation in the named articulation. To what is this constriction due? Is it an inflammatory process in the derma, or is it an atrophic process in the derma, kindred to that of *lepra mutilans*? Nothing of the kind is indicated by the specimen. The derma noticeably slopes in the immediate vicinity of the strangulated place, whose middle portion, as mentioned above, is occupied by the flexor tendon ; there are no signs of an inflammatory thickening on the place of the constriction.

Furthermore, how could a primary constriction of the derma explain the remarkable deviation of the two phalanges within the stump? It was said before that the phalanges stand in an acute angle outward and upward. Can a narrow constricting ring ever produce such a deviation of bony formations?

The probability, in fact, is that the constricting ring is produced artificially, by a thin ligature tied around the toe, if not continually, at least for certain periods. The deviation of the phalanges, and the changes within the tissues, indicate a self-mutilation rather, done with a purpose and persistence, than a disease of a specific nature.

C. HEITZMANN, I. E. ATKINSON, *Members of the Committee.*

The report of the committee was on motion accepted.

Exhibition of Specimens.

Various microscopic specimens, illustrating the several papers read at the meeting, were then placed under several microscopes and demonstrated to the members of the Association. After considerable discussion on these, the newly-elected officers of the Association for the year 1881-2 were duly installed, and the Association then adjourned, to meet in Newport, R. I., on September 1, 2 and 3, 1882.

NERVOUSNESS RESULTING FROM INTEMPERANCE.—We have found Celerina exceedingly valuable in the treatment of nervous headache, nervous exhaustion, and other associated ailments of women : but the cases to which we now desire to call attention, where the Celerina is of inestimable value, are those suffering from nervousness resulting from intemperance. Every practitioner meets with such cases. Men, and sometimes women, come to us trembling and apparently exhausted, all from the effects of intemperance. Such cases are approaching delirium tremens. Celerina is the most appropriate prescription we can give them. A few doses of bromide of potassium may be given, alternated with the Celerina, at first ; but after this, for permanent effects, we depend upon the Celerina.—*American Med. Journal.*

MAYOR LATROBE, of Baltimore, has signed an ordinance absolutely prohibiting the sale of toy pistols in that city. The large number of deaths by lockjaw last summer prompted the passing of the act.—*Boston Med. and Surg. Journal.*

RESECTION OF SMALL INTESTINE.—Kœberli has reported to the French Academy cases of resection of the small intestine, and advocates this operation. This is not new ; the operation was successfully performed at Manassas Junction, Va., during the war.—*Medical News.*

Foreign Correspondence.

LONDON, Nov. 6, 1881.

EDITORS CHICAGO MEDICAL JOURNAL AND EXAMINER:—

The medical visitor in London is impressed during his progress through the city in almost any direction by the immense numbers and diverse purposes of the hospitals. One would infer that almost every cubic inch of the human form divine was the object of special study and treatment. The chest, throat, eye, ear, genito-urinary tract, rectum, brain, teeth, skin, hip-joint, have each one or more hospitals professing to treat the special diseases to which the organ in question is subject; beside which children, women pregnant and women not pregnant, consumptives, cancerous patients, the paralyzed and epileptic, the insane and those suspected of a clandestine tendency toward insanity, the syphilitic, the fever patients, those requiring orthopædic treatment, are the objects of tender solicitude to hospitals treating these various ailments respectively. Besides these are the numerous general hospitals, and almost innumerable dispensaries, public and private.

Yet all these various institutions have, with the exception of a few well-endowed hospitals such as Guy's and St. Bartholomew's, one phase in common, namely, that they are "supported by voluntary contributions," a fact published in enormous letters in a most conspicuous place on the building. A series of boxes placed at salient points and adorned with scriptural quotations, with touching allusions to your deceased aunt, explains itself. Yet most of these institutions are more or less endowed, and not strictly dependent upon the benevolence of the public.

Another more agreeable feature is also common to all. With

rare exception, the simple presentation of one's professional card secures him the courteous attention of the physician in attendance, and a cordial invitation, at the conclusion of the visit, to come again.

The natural inference, from the sight of these hospitals, that the London profession is an army of specialists, is but half correct. It is true that most of the better men study especially a particular organ or system of organs, but not to the exclusion of the rest. The London ophthalmologist is a general surgeon, the London neurologist is a general physician. Hence it happens that the specialist often knows surprisingly little of his own "particular vanity," while the general physician or surgeon seems astonishingly familiar with various specialties. Yet no one, with rare exceptions, attempts to cover more than half the medical field—medicine proper, or surgery. The line of demarcation between physician and surgeon is sharply drawn in professional qualifications as well as in practice. The physician is supposed to have studied longer, and to have passed more trying ordeals of examination; he affects somewhat contemptuous ignorance of matters surgical, and calls in a surgeon even to amputate a finger. The surgeon, on the other hand, while appropriating everything requiring manual interference, and doing "light jobs" on the viscera, refers with reverent humility all the more important internal lesions to the supposed superior wisdom of the physician. Nor is this distinction merely formal, as I was at first inclined to suppose. I once heard Mr. Hutchinson's assistant surgeon, in narrating Mr. H.'s endeavors to elucidate the relations between certain skin diseases and systemic conditions, say, by way of apology for lack of success, "Mr. Hutchinson is, however, only a surgeon." The man whose work is familiar to all is supposed to know nothing more about the body than the probe, scalpel and ophthalmoscope reveal; and has no other conventional title than if he were a successful brewer or politician!

That Jonathan Hutchinson is so ignorant of medicine I do not believe; yet a surgeon of a large hospital, upon being consulted the other day as to the (possibly aneurismal) nature of a tumor in the thigh, called for a stethoscope; a binaural instrument was offered him; he hesitated, then, with the firmness of despair,

grasped it manfully, applied it to his ears, point backward, and after listening (?) a moment, gravely, and doubtless truthfully announced, that he heard nothing. An incision revealed the wall of an aneurism about one-half inch below the skin.

The medical teaching here presents great advantages combined with glaring deficiencies. I will abstain from discussion, and content myself with remarking that while the student has here opportunities for clinical observation unequaled at any school, American or Continental, of which I have personal knowledge, there is, nevertheless, such imperfect individual instruction in methods of diagnosis as to permit a man to remain quite unacquainted with microscope, ophthalmoscope, laryngoscope, and even stethoscope. The students in a certain large hospital here call all adventitious sounds in the lungs "crepitations." A careful study as to what a "crepitation" was, revealed to me, under that name, sometimes the moist râles of bronchitis, sometimes the dry râles of asthma, again the crepitant râle of incipient pneumonia, but especially the gurgling râles of advanced phthisis. Whether any distinction is made as to the pathological significance of these various "crepitations," I am unable to say.

A word as to hospital management, in discussing which I shall refer to the London Hospital—the largest though not the wealthiest in Great Britain—where I have for four months been clinical assistant.

Aside from the usual amount of red tape essential to the average Briton's ideas of propriety here and hereafter, the management is generally excellent. The board of managers or "governors" (this word is doubtless chosen to imply, not a judicial, but a paternal relation to the hospital, since it is young Britannia's pet name for his most immediate male ancestor), is less obnoxious than such bodies usually are. The domestic affairs are in the hands of non-professional men, but are probably as good as possible under these circumstances. But it is of the ward work that I wish especially to speak. Each ward, containing ordinarily about forty-five beds, is furnished with a head-nurse, technically called "sister," and two assistants—all of them of better social grade than the usual American or Continental nurse; indeed it is not uncommon to see ladies (in the English sense) performing

these onerous duties. These three are replaced at night by a fourth nurse. The sister is responsible for the details of the nursing, and performs, personally, the less disagreeable work. Every medical ward is provided with drugs required for emergencies; a set of tubes, reagents, etc., for urinary examinations; a laryngoscope, stethoscope, hypodermic syringe. The surgical wards have each a small operating case, air-cushion dressings, etc. Ventilation is by flues, and dubious. Iron bedsteads with hair-mattresses are used, the bed provided with half curtains, which secure to the patient a certain degree of privacy, at least above the waist. Over each bed hang two written records—one containing directions for the nurses—medicines, applications, etc.; the other a history of the case; a chart of the temperature, taken twice daily; the quantity of urine passed in ounces; the number of stools (all recorded by the nurses), and the condition of the urine, recorded once a week by the clinical clerk. Diagrams are provided, showing in outline the various regions of the chest and abdomen, for convenience and accuracy in recording the location of tumors, lesions, etc.; in special cases charts for electrical reactions, elaborate analyses of urine in diabetes, appearances of the fundus oculi in cranial disease, etc., are furnished.

In a wire frame hang cards naming the articles which compose the patient's diet. Stimulants—*i. e.*, distilled—are used only in special cases, but beer is included among dietary articles.

The floors are plain wood, a broad matting extending down the center of the ward. A comfortable fire on a large hearth relieves the otherwise desolate aspect. The mental and moral needs are supplied by a profusion of pious texts distributed around the walls; by prayers from the Episcopal service at each bed, and by a few dozen books.

Children are accommodated in four large wards; and two others are devoted to Hebrew patients. No maternity nor contagious fever cases are admitted.

The points of interest in the practice of this and other hospitals will be referred to later.

W. T. BELFIELD.

Domestic Correspondence.

ARTICLE X.

EDITORS CHICAGO MEDICAL JOURNAL AND EXAMINER:—
No one will dispute the assertion that there cannot be found a more enterprising and progressive city than Chicago; and it is therefore to me a matter of pleasure as well as pride that I am able to communicate to you and your readers a new venture, which cannot fail to add to the fame of this beautiful city. Recognizing the fact that the most advanced stage of civilization is inconsistent with a limited number of physicians and few professors of medicine, a number of gentlemen prominent in the profession in this city have taken the necessary steps to incorporate a new college, to be known as the Illinois State University of Medicine, to be located, of course, in Chicago. It is true that a similar institution, called the Chicago College of Physicians and Surgeons, is in process of organization, in order to meet "a want long felt," but the University of Medicine presents features so entirely distinct from the former, that they ought not to be confounded by any person possessed of average intelligence.

As is observed from the advertisements for professors in the various medical journals, the number of professorships in the College of Physicians and Surgeons will not exceed twenty, and the resident of any State in the Union is eligible for a professorship, if he possesses the necessary qualifications, which may be ascertained by addressing the Secretary (in confidence). Not so, however, in the Illinois State University of Medicine. In conversation with the accomplished Dean and other members of the prospective faculty, I learn that no one shall be eligible for a professorship unless he be a citizen of the State of Illinois, the incorporators being well aware that there is no need to go outside

the State, or this city, even, to secure abundant material for professorships.

Again, it is the determination of the incorporators to greatly enlarge the miserably small percentage of physicians who are professors, and by every means in their power to contribute to the very essence of medical progress by so enlarging the number of professorships in the university, that the percentage of physicians in this city, at least, who are not professors, will be very small indeed. To accomplish this laudable object, the number of professorships in the university will be unlimited, new chairs to be constantly created as additional candidates may appear. Such neglected branches of medicine and general science as the diseases of the umbilicus, ante-natal impressions, medical astrology, etc., will be duly represented by separate and distinct chairs.

I am also informed by the Dean that all graduates who are residents of this State will be presented with a lectureship in the summer course of the university, and the degree of Master of Arts. Many other features of interest which will distinguish the university might be mentioned, but as the prospectus will shortly be issued, I forbear to trespass any further on your limited space.

With the Illinois State University of Medicine, the Chicago College of Physicians and Surgeons, the Chicago Medical College, the Rush Medical College, the Woman's Medical College, the Hahnemann Medical College, the Chicago Homœopathic College and the Bennett Eclectic Medical College, all located in Chicago, we may indeed pride ourselves that we not only lead the United States, but all creation, in the matter of medical education, and assure ourselves that the time is not far distant which will truly be the millenium, when every citizen of Illinois will be a Doctor of Medicine, and every practitioner of the noble at a professor as well.

CHICAGO, ILL.

E. J. DOERING.

ARTICLE XI.

PRESCOTT, WIS., Sept. 29, 1881.

MESSRS. EDITORS :—I have recently had a case in which from personal considerations I was deeply interested, but it also possessed considerable professional interest to me, not having in thirty years' practice met a similar one, and also from the incertitude attending the diagnosis.

There are one or two points in the case on which I would like your opinion, and therefore inclose notes of the case. I shall be pleased to hear from you at your leisure.

Mrs H., aged twenty-six years, of highly nervous organization, general health rather feeble, has been married five years, and has suffered severely from dysmenorrhœa during that time, excepting last few periods. Supposed to be three months advanced in her first pregnancy. Soon after sitting on the damp ground, was attacked suddenly with severe pain in left side, near upper edge of iliac fossa, radiating in direction of distribution of upper lumbar nerves. There was considerable tenderness, with apparently an abnormal fullness in the region indicated, though no clearly defined tumor could be made out, the abdomen being well covered by adipose tissue. The pain was soon relieved by anodyne and warm applications. After the action of a cathartic, the fullness nearly but not entirely disappeared. During the next three weeks she had several similar attacks, lasting from a few moments to an hour or two; sometimes two or three in twenty-four hours, and then not for two or three days. At first there was no vesical irritation, but subsequently there was considerable vesical tenesmus present during the attacks of pain, which thus had the appearance of ordinary attacks of nephritic colic. The tenderness persisted, but was a source of but little annoyance. Finding that the attacks were much more apt to recur when on her feet, she remained most of the time in a recumbent position.

About three weeks after the first attack, Monday, four A. M., while asleep, she was taken with the same pain, but in an intensely aggravated form. I saw her within a few minutes, and found her screaming with agony. My first impression was that a

rupture into the peritoneum of some abnormal growth—possibly a tubal pregnancy—had occurred; but the persistence of the pain, the severe vesical tenesmus present, and the absence of evidence of shock, except so much as might be fairly attributable to the pain, led me to conclude that a large and rough calculus was attempting the passage of the ureter. (Having recently, in my own person, had this experience, I had a vivid conception of the sufficiency of this cause for all the symptoms). She was as speedily as possible put under the influence of morphine, assisted at first by chloroform inhalations, this influence being kept up during the future of the case. The pain soon became bearable, but did not cease, as if the calculus had passed into the bladder, and I inferred that if a calculus, it had lodged in the ureter. Within thirty-six hours symptoms of severe general peritonitis had supervened, which, despite the treatment adopted, proved fatal Saturday eve, seven days from attack.

An autopsy (which unfortunately had to be conducted hastily) was held, which revealed the anticipated evidences of the fatal peritonitis. In the left iliac fossa was found the *origo mali*—a large, firm, round coagulum, including in its structure the ovary, Fallopian tube and broad ligament. The tumor was easily lifted from its bed, and was found to be at one point in contact with and attached to the left cornua of the uterus by a narrow, short pedicle, consisting of the ovarian ligament and Fallopian tube, twisted so as to have performed a complete revolution on itself. The broad ligament had within it two cysts filled with bloody serum, the larger the size of a large orange, the smaller half that size. The structures of the ovary, tube and broad ligament were so completely infiltrated with coagulated effused blood, that the whole mass of the tumor had the appearance of a homogeneous clot. Part of this coagulum within these organs, in appearance at least, seemed to antedate the main mass of coagulum. The point from which the hæmorrhage proceeded was not discovered. The tube itself was thought to be intact. Within the uterus was a four months foetus.

The points of the case upon which I would like your opinion are: 1. The cause of the repeated attacks of pain. My own impression is that they were due to repeated small hæmorrhages

which gradually infiltrated and distended the structure of these organs, until finally a rupture into the peritoneal cavity occurred ; though, in this case, I do not see why an anodyne and warmth should have always controlled the pain within a short time.

2. Had the twisting of the pedicle (which I would have thought anatomically impossible without rupture of some of the tissues) anything to do with the attacks of pain or the hæmorrhage?

ARTICLE XII.

TO THE EDITORS OF THE CHICAGO MEDICAL JOURNAL AND EXAMINER :—I have read with pleasure and profit Dr. Clevenger's article on Medical Electricity in the November number of the MEDICAL JOURNAL AND EXAMINER, and will say at once that I am in hearty accord with his criticisms upon inexact, unscientific and pretentious electro-thérapeutic measures. This protest against indiscriminate electrization should be entered again and again until no reputable physician would dare to pump, so to speak, electricity into or through his patient with the view of counteracting a suspected, though unlocalized and undiagnosed diseased condition. I have always contended that the conscientious practice of electrization must be founded on the dictum of Benedict, viz : To treat the seat of disease, or, to make an amendment to this rule often found necessary, to treat also the part affected. For instance, in a hemiplegia both cerebrum and the affected nerves and muscles are to be treated. Regarding, then, both an accurate diagnosis and a localized treatment as essential, I can but sympathize with Dr. Clevenger's criticisms upon unscientific methods. The terms "central galvanization," and "general faradization," for instance, appear to me to be as pernicious as unscientific. But, just at this point, and in this connection, I wish to say that I fear Dr. Clevenger has received a wrong impression of the methods pursued by Charcot and Vigouroux in statical electrizations. Referring to a discussion at the meeting of the American Neurological Association held in June last, he writes : "The methods of Charcot and Vigouroux in the

use of a large platform whereon numbers of patients were electrized at once, were characterized as unwarrantable." To be sure, he was justified in this idea by the words of a member * of the Association, who stated that "they" (Charcot and Vigouroux) would huddle together upon a single isolated stool cases of hystero-epilepsy, locomotor ataxia, paralysis agitans, a case of anæsthesia, and a case of headache, thus forming a series of pathological conditions which had nothing in common, and apply the same current to all of them." The term "unwarrantable" should rather be applied to this last quoted statement than to Charcot's methods. The idea conveyed is entirely fallacious. The treatment did not consist in being "huddled" upon a platform to which static electricity was conveyed. This was merely an essential preparatory condition of general "electrification" or "charge." The real treatment consisted in drawing sparks from the seat of disease in each instance where this was practicable—in the ataxic, from over the spine, in paralysis agitans from over the spine and from the shaking members, in the hystero-epileptic, and the anæsthetic from the affected part, and in cases of peripheral paralysis from the nerve involved. Surely this was conscientious and scientific electrization, and scarcely deserves to be called an unwarrantable method; unless, indeed, it is "unwarrantable" to try new remedies, or methods, or forms of electricity; unless, indeed, it is more desirable to confine oneself to what each critic may consider the settled and fixed facts of medicine, and to assert that there is no opportunity for advance in the treatment of disease.

But I do not here intend to re-argue the claims that static electrization has upon the medical profession. These claims I have already set forth in several publications, notably in a paper read before the New York Academy of Medicine, March 3, 1881, and printed in the *New York Medical Record* of April 2, 1881.

In this paper I first led the way to the present resurrection of statical electrization in America, following the indications and teachings of Charcot and Vigouroux in France. I am gratified that the subject is receiving a fair investigation.

From the standpoint of the medical electrician I have little

* Dr. Amidon.

interest in the matter, though I think that in the future the specialist in electricity will feel obliged to resort to statical as well as galvanic and faradic electrizations; but as a physician interested in the neurological side of diseases, I am confident that statical electrization has a place in effective treatment as fixed, understandable and reliable as strychnia, the bromides, the douche, or as have the more familiar galvanization and faradization.

Waiving, then, discussion as to the present status of statical electricity, I ask brief space for comment on a point more nearly personal.

Referring still to the last meeting of the American Neurological Association, Dr. Cleverger remarks: "Dr. Morton described an apparatus, *by means of which he claimed results similar to those obtained by the secondary coil, and erroneously called it a new induction current.*" It is not probably meant that I called the "apparatus" a new "induction current;" but rather that I claimed to have produced results similar to those obtained by the secondary coil, and that I claimed that I produced these results by means of an induction current, and that this induction current was new.

And first in regard to the results:

The results referred to are nerve and muscle reactions, produced from a Holtz machine, and exactly similar to those produced by the ordinary Faradic machines. These results were publicly and practically demonstrated before the New York Academy of Medicine, and they have been admitted by all physicians and electrical experts who have witnessed them.

It is of these reactions that Dr. Bartholow writes: "The impression made by the electricity is like that of the faradic machine, but is much less painful, and strong muscular contractions are thus induced with greatly less pain than can correspondingly strong contractions of the muscles be obtained by faradism. We have thus added to our resources an immensely useful instrument for the production of these effects hitherto obtained from faradism."

Dr. Bartholow's observations have all the more force, since they were made independently of my own experiments, and were published only a few weeks later.

That I justly "claimed" to have produced the results in question may, then, be considered as settled.

Next, as to the second point, that I "erroneously" called the current "a new induction current." Now in all friendliness, I ask Dr. Clevenger to substantiate this criticism. I shall be as glad as any one to be set right in the matter. It is a question not without interest to electricians, owing to the wide range of usefulness possessed by induced currents, and this one in particular, in helping to restore paralyzed muscles and degenerated nerves to their normal functions.

I wish to demonstrate to him, respecting as I do his criticism, and the pages of the journal whence it proceeds, first, that the current I described is a true induction current; and second, that it is new. This demonstration, I may add, seems to me to be superfluous to any one who has evoked the current in actual practice from a Holtz machine. A moment's inspection by any one familiar with induced currents would save pages of writing. And I would apply the same remark to my critics* in the American Neurological Association, who seem to have entirely misapprehended the question. I can only hope that Dr. Clevenger has prematurely accepted their criticism as final, without personal investigation and knowledge of what I claim.

To produce the current in question, remove the connecting bar or chain between the two *outer* tin-foil coatings of the two Leyden jars usually attached to a Holtz machine. Connect ordinary conducting wires and wet-sponge electrodes to each outer coating respectively, and finally connect the two *inner* coatings by the discharging rod. As soon as the machine is set in motion, and the Leyden jars are filled, the discharging rods must be drawn out a very small fraction of an inch, and at once a current is felt between the two sponge electrodes, which in its general characteristics cannot be distinguished from the ordinary Faradic current. The experiment succeeds best with a large Holtz machine.

Next, is this an induced current?

It is a "current," according to the recognized definitions of

* Drs. Amidon, Gracie and Birdall.

the term, for it is an equalization of two potentials along a conductor. Every electric discharge, however brief, is a current; the spark is a brief current. The voltaic, or so-called "continued current" is no more nor less than a succession of brief discharges; in other words, the potentials are continuously kept up to a rapid discharging point. The Faradic, or induced current, in the same manner, consists simply of the alternations of direction in a current set up through a dielectric by a voltaic discharge; *i. e.*, a "make" and "break" in the battery current.

I consider it demonstrated, then, that whatever electrical process takes place along the conducting wires or through the wet-sponge electrodes, while a Holtz machine is arranged and working as above described, is a current. For the unequal potentials exist in the *outer* tin-foils of the Leyden jars, constantly kept at a fixed point of discharge by the working of the machine; while their equalization takes place along the conducting wire, and between the electrodes properly placed. In this current, as in the induced current, the term is loosely applied to a succession of alternating discharges or influences along a conductor.

Next, is this current an induced current?

It is *induced* or created by influence through the dielectric glass, and by the respective positive and negative electricities *inside* the jars.

We will, for instance, set the machine in motion with its discharging rods one-sixteenth of an inch apart. What happens? A spark, *i. e.*, a current in brief form, passes between the positive electricity of the inside of one jar and the negative electricity of the inside of the second jar. At the same instant, an induced current, *i. e.*, a brief equalization of potentials, takes place between the outsides of the same two Leyden jars. If, now, the discharges from the inside of the two jars are very rapid, as between the electrodes of a Holtz machine, the discharges on the outside are also very rapid, but the discharges from the inside, passing through a bad conductor like air, take the form of zigzag lines of so-called sparks; while the discharges from the outside, being led through tolerably good conductors, do not take a spark form (though they may be made to do so), and we thus

have at the sponge electrodes connected to the two respective outsides an "induced current." It is "induced" for the reasons given. It is a current for the reason given. It is rapidly alternating, like any true induced current; and, to carry the analogy further, the discharge between the inside of the jars is no more nor less than the counterpart of the "battery current," and the succession of spark discharges at the usual discharging rods is no more nor less than the ordinary "make" and "break" in the battery current of an ordinary Faradaic machine. In the one case a continued static discharge, or equalization of potentials, takes place; in the other, we have a voltaic or galvanic discharge and equalization of potentials.

Now, the current obtained from any induction coil (ordinary Faradaic batteries) is often termed the Voltaic induced current. I ventured to call, by analogy, the current I have discovered the "static induced." I have yet to be shown that my terminology is not well selected.

Lastly, as to the point: Is this induction current new?

As a current capable of producing muscle and nerve reactions similar to other induction currents, I claim that it is. Its novelty lies not in the simple scientific fact that a discharge of static electricity provokes in a neighboring but untouching conductor an induced discharge or current, but in the fact that this induced discharge or current of static electricity may be so affected by an *interruption* in the inducing discharge as to cause physiological action in nerve and muscle. Uninterrupted, this induced current produces in the human body no appreciable effect—interrupted, it is a serviceable ally in medicine. After many attempts at manufacturing an efficient interrupter, I found that the spark discharge between the discharging rods was the simplest and best.

And medically it is "a new induction current." In spite of the large medical use to which static electricity has been put during more than a hundred years, I am not aware that any one, before my experiments or publication, made use of any similar medical application of static electricity by means of any arrangement of Leyden jars with any form of frictional or inductive electric machine. I may then, in short, say that although an

induction discharge of static electricity was known to exist, no one ever interrupted it and applied it to the human body, and got physiological results. Herein lies its novelty, and herein it is a discovery or invention.

This is not the place to refer to the physiological effects of the new current. I will simply say that it seems to me, and to others who, on investigation, have come to the same conclusion, that the static induced current produces stronger and more diffused muscular contractions, and with less pain, where pain is necessarily produced, than the voltaic induced currents now in use. In many cases of paralysis (of the anterior tibial group of muscles, of the deltoid, in Bell's paralysis, in infantile spinal paralysis, etc., etc.) I have obtained muscular contractions, where I have not been able to do so with a Gaiffe battery, or with the battery manufactured by the New York Galvano-Faradic company.

I am quite ready to admit that I "must experiment and report more fully before the apparatus will win favor." This I expect to do; but in the meantime, I am sure Dr. Clevenger and the JOURNAL AND EXAMINER will appreciate my desire to make clear to them the fundamental facts in the matter, even though it require what I fear is a somewhat lengthy letter, to arrive at the result. I am

Very respectfully yours,

WILLIAM J. MORTON.

15 EAST 45TH ST., NEW YORK, Nov. 26, 1881.

MEN OF PROGRESS.—There is soon to be published a work with this title. The publisher calls upon the physician, who dictates his own life; he next pays for an engraving of himself, and presto becomes great. It is difficult to escape such a fate.
—*Medical News.*

Reviews and Book Notices.

ARTICLE XIII.—THE DISEASES OF CHILDREN. By WILLIAM HENRY DAY, M.D. Second Edition. 8vo., cloth, pp. 752; \$5.00. Philadelphia, Presley Blakiston. Chicago: W. T. Keener, 96 Washington Street. 1881.

This is one of the best works on the diseases of childhood. It is complete, well written, entirely practical, embraces the latest views, and is based on the wide experience of Dr. Day in private and hospital practice. The chapters on Hygiene, Debility and Dentition are very well written, and will prove useful to every reader, notwithstanding the opinion of a few critics to the contrary. The chapter on typhoid fever in infants evinces the fact that the disease is quite common, and has just as often been overlooked by the majority of physicians in the past, being treated as infantile diarrhoea or remittent fever, and many of the ablest practitioners to-day will substantiate this statement.

The statement that simple diarrhoea may pass into all the other varieties is very sensible, and so is the author's treatment of those diseases. A variety of useful prescriptions, specially adapted for busy practitioners, are found through the volume, and by themselves at the end; which arrangement is very commendable. The two last chapters, devoted to diseases of the ear and diseases of the skin, although necessarily brief, will prove useful.

Chapter XVII, given to Intestinal Worms, begins thus: "The presence of worms in the intestinal canal is one of the commonest troubles of childhood." Although this statement is also made by some of the best writers of the continent, it does not hold good in this country, for one reason or another. However, this work is well suited for students and practitioners,

although not any more so than some American works on the same subject. On the whole, the profession will be thankful to Dr. Day for this new edition of his valuable book. H.D.V.

ARTICLE XIV.—CYCLOPÆDIA OF THE PRACTICE OF MEDICINE.

ZIEMSSSEN. Vol. IX. Diseases of the Liver and Portal Vein, Interstitial Pneumonia. Pp. 928; Id. Supplement, pp. 844. William Wood & Co. 1880-1881.

These two volumes, together with the index, form the completion of perhaps the most important effort at unifying the science of medicine. It is a great credit to Germany to have thus gathered in a small compass all the medical genius of a people preëminent in all sciences. No writer on any disease would be pardoned to-day if he had not had some acquaintance with Ziemssen's *Cyclopædia*, yet for reasons which we will presently state, such cyclopædias present many disadvantages. We see one of these in this ninth volume, where the subject of Diseases of the Liver has been stretched out of proportion to all others to fill 836 pages, though otherwise well treated.

The supplement evinces another disadvantage, and several contributions are too deeply stamped with the "busy practitioner,"—resembling somewhat the usual "Society Transactions." However, the contributions to Syphilis, by Prof. J. N. Hyde, of Chicago; to Diseases of the Pleura, by G. M. Garland, M.D., of Boston; to Diseases of the Nose and of the Pharynx, by J. Solis-Cohen, M.D., and a few others, are as remarkable for their value as for their brevity.

The few illustrations accompanying some of the articles are very poor.

The comparative and well deserved success of this work warrants the prediction that for a decade to come, the profession will be flooded with cyclopædias. Indeed, there is the *Cyclopædia of Chemistry*, that of *Surgery*, and others in view. Whatever their intrinsic value, a second edition of these works is almost impossible, on the one hand; and on the other, science has never exhibited before such wonderful changes as in the last thirty years. In the end, individual efforts generally prove the best. H. D. V.

Original Translations.

ARTICLE XV.

THE VARIOUS CONDITIONS UNDER WHICH ALBUMEN IS FOUND IN THE URINE. By ED. ROBIN.

Urine becomes albuminous : 1. In croup or laryngeal diphtheria ; in ascites, or far-advanced abdominal dropsies ; in that emphysema in which much dyspnœa takes place ; in pulmonary phthisis, especially if complicated with pneumonia, and accompanied by much difficulty in the respiration ; in the child-bearing state, after the abdominal circulation is interfered with ; that is, in those diseases in which a notable diminution of combustion (oxydation) follows a difficult respiration.

2. In cyanosis, whatever its cause, and in heart troubles carried to that extent that the patients are in a state of partial asphyxia ; hence in cases in which an obstacle to the circulation, or a vicious conformation of the heart, prevents hæmatisis from being as complete and as rapid as under ordinary circumstances.

3. In eclampsia.

4. In cholera, a disease which diminishes considerably the oxydation of the blood.

5. In idiopathic or in traumatic lesion of nerve-centers, with lowering of temperature, and a notable diminution of combustion.

6. In diabetes, a disease in which, often enough, some primitive and analogous lesion seems to have existed ; in which, besides, a great amount of sugar in the blood impedes the combustion of albuminous matter and hæmatisis ; in which, finally, as Bouchardat observed, the temperature is lowered by one or two degrees in deeply diseased subjects.

7. In that sort of deficiency of nervous fluid which character-

izes the state called curvature of the spine, which is most likely accompanied by a considerable diminution of calorification.

8. In the natural or artificial suppression of cutaneous perspiration, a suppression which sensibly diminishes the absorbing capacity of blood for oxygen, which may bring on a sort of semi-asphyxia, at any rate, a considerable lowering of temperature, which necessarily produces a marked diminution in the latent combustion of the tissues.

Thus urine becomes albuminous from the use of impermeable artificial coverings to the skin; and the same phenomena is not rare in those diseases, as measles, scarlet fever and small-pox, in which the functions of the skin are liable to be greatly interfered with.

From an analogous cause, urine is albuminous as a sequel of an intense cooling of the surface of the body from cold.

Lastly, Bright's disease, in which the urine is always found to be albuminous, is precisely referred to many of the causes just enumerated: heart disease; changes in the liver; a retardation or suspension of circulation in the abdomen, whatever the cause; a sudden impression of intense cold; large imbibition of alcoholics; pulmonary phthisis with dyspnoea, etc.

As a general rule, the urine of common quadrupeds, and that of birds, does not contain albumen. In reptiles, on the contrary, in batrachia, in frogs, at least, so remarkable on account of their low animal heat, some albumen is always passed with the urine (Dumas).

It is not quite demonstrated, yet very probable, that urine becomes albuminous under the influence of those agents which, according to one, protect to quite an extent from latent combustion. I have but few facts to substantiate that view.

Urine becomes albuminous in protracted anæsthesia, and in slow poisoning by cyanhydric acid; habitual drunkenness predisposes to albuminuria to quite an extent. This state suddenly appears sometimes in syphilitic patients under a course of mercury. . . . The albumen discharged represents so much organic matter which has escaped a transformation into urea and uric acid, from a lack of activity in the oxydation of the blood.

Whatever the true theory, it remains a constant fact that *any important alteration in hæmotosis gives rise to albuminuria.*

The foregoing were condensed from a communication made in 1851 to the *Académie des Sciences*, by myself. The following are facts generally ascertained since :

The fœtus of quadrupeds resembles cold-blooded animals as to its hæmotosis, and its urine is albuminous, and remarkable for a total absence of urea.

When death is approaching, the respiratory movements and the cardiac contractions weaken to quite an extent ; the lungs become congested ; in a word, hæmotosis is considerably diminished, and, as observations prove, this state is liable to cause albuminuria. . . . Septicæmia, hospital gangrene, phlegmonous erysipelas, yellow fever, typhoid, and typhus fever, which are all remarkable for a diminution of hæmotosis, are also remarkable for the frequency of albuminous urine. This condition of the urine is, indeed, one of the most constant symptoms of typhoid fever, and, according to Finger's observation, the renal tissue may remain intact.

From the same cause, miliary sweat, in which hæmotosis is so diminished and the blood so thin, is one of the diseases accompanied by albuminuria.

Jaundice often depends on a rapid diminution of hæmotosis, and it is sometimes accompanied by albuminous urine.

Chlorosis, a type of pathological anæmia, diminishes notably the number of red corpuscles, and often has albuminuria for one of its symptoms.

Gout; red gravel; rheumatism; sicknesses in which hæmotosis is frequently diminished, are often accompanied by albuminuria.

Let the alteration result from tuberculosis, syphilis, cancer, glanders, malaria, scrofula, or other causes, all cachexias have this in common, that they diminish the formation of blood corpuscles, and diminish in a marked degree respiratory combustion. All of them diminish the tenacity of tissues, and end by allowing an escape of albumen with the urine.

In meningitis, the nature and the seat of the disease; the somnolence, coma, nausea, vomiting, convulsions; all seem to

indicate marked disturbance in hæmotosis. (See Book III of my works on the Reformation of Medical Sciences, theory of purgatives and emetics). Indeed, according to Rosenstein, albumen appears in the urine from the beginning of the sickness, in adults as well as in children.

Influence of cathartics and emetics. According to my theory on the subject, quite a number of cathartics and emetics produce this action by diminishing more or less rapidly the formation of blood. Hence it would be quite natural for drastic cathartics to give rise to albuminuria; and this has often been observed. Nitrate of potassium itself is liable to render the urine albuminous, whether it is taken in repeated large doses, or in small doses for a long time.

Influence of anæsthetics. According to the same theory, anæsthetics protect from putrefaction after death, and retard blood formation during life. And, in accordance with what was already known of chloroform and several ethers, it is now ascertained that chloral hydrate is anti-putrid after death; that it retards greatly vital combustion; that in repeated large doses it causes nausea and vomiting; that it brings on a relaxation of the tissues; that long taken internally, it may bring on albuminuria, anasarca, and a sort of poisoning resembling that caused by ergot. (Smith, *Boston Med. and Surg. Journal*).

Coffee is antiseptic, sedative, not very energetic; and according to my views, may, when taken in large doses, give a darker color to the blood, diminish the exhalation of carbon dioxide and the production of urea; it may act as a diuretic, and let albumen escape with the urine. The same is true of fuchsine, especially arsenical fuchsine; it is antiseptic, retards hæmotosis, and may be accompanied by albuminuria.

Metallic compounds. Those salts of the metals proper which do not absorb oxygen are generally antiseptic after death, and poisonous during life. In my view, the subsequent death, and the symptoms which precede it, manifest in various degrees an arrest of hæmotosis. All of them may doubtless cause albuminuria; at least, the number of them in which the fact has been ascertained has considerably increased since I first brought out my theory. Then my only observations referred to mercurials,

but now the following are said to act thus: the soluble compounds of antimony and lead (Ollivier); some silver compounds (Lionville); salts of cadmium; nitrate of uranium; various copper salts; arsenical compounds; gold and palladium chlorides.

Moral influences. It is a well-known fact that sad moral affections may diminish hæmatisis to quite an extent. It is also a well-known fact that these may cause diuresis, intestinal evacuations, vomiting, albuminuria (Prout, etc.)

Influence of water taken internally. Upon injecting a certain amount of water into the veins, the blood becomes very thin, there is a marked decrease in hæmatisis, with a sedative effect very marked. As in the preceding cases, the marked arrest of function is accompanied by an escape of albumen into the urine (Magendie). These results have been verified by Hermann.

Influence of oxydizing agents—that is, agents which are known to diminish the quantity of free oxygen, and to rarefy the atmosphere. In phosphorus poisoning, an energetic oxydizing agent, the quantity of oxygen in the blood is markedly diminished. This diminution is otherwise manifested by a marked change in color, by a striking increase of fat, enlargement of the liver and vomiting. What becomes of the albumen of the blood under such circumstances? It passes away with the urine (C. Schultzen).

According to the experiments of Cl. Bernard, *carbon protoxide gas* forms with hæmoglobine a kind of compound more intimate than that resulting from oxygen, so that when it is respired, it has a tendency to displace this gas from the blood globules, and consequently diminish hæmatisis; the temperature is lowered, the amount of urea diminished, while that of uric acid is increased (Ritter). This also justifies my theory, for carbon protoxyde is antiseptic and preserves dead bodies, its inspiration also causes albuminuria. At high altitudes, a rarefaction of the air ought to diminish hæmatisis. Indeed, the blood turns darker, the liver often becomes congested, vomiting, as above described, becomes manifest if the transition is sudden, and urea is diminished in the urine (Bert). Also, albuminuria is much more frequent on high mountains than at the level of the sea (Jourdanet).

The preceding facts demonstrate in the highest degree the

exactness of our theory, and their publication, we hope, will stimulate also to greater progress in that line.—*Revue Medical*, July 30, 1881.

LISTERISM TOTTERING.—Just as every body thought the carbolic spray of Lister had become an established method in surgery, it receives a stunning blow from one of its former advocates, Mr. Keith, the great ovariologist. At the International Congress, according to a letter in the *Boston Medical Journal*, Prof. Keith declared, the subject being under discussion, that he had abandoned the antiseptic treatment altogether. "True," he said, "I had eighty successive recoveries under Lister's method, and stopping there it would be a wonderful showing. But out of the next twenty-five I lost seven. One died of acute septicæmia, in spite of the most thorough antiseptic precaution; three of unquestionable carbolic acid poisoning; one of renal hæmorrhage." He went on to say that out of the eighty consecutive cases (or rather he said it first) many came too near dying; that a large number got a high temperature—105°, 106°, 107° Fahrenheit—the evening following the operation, but he said "they happened to pull through." He then said that since he had for four months past abandoned the antiseptic method, and relied upon perfect cleanliness, care in controlling hæmorrhage, and thorough drainage, his cases were giving him much less trouble, and he was getting more satisfactory results.

He now stopped for a few moments, hesitating, as he must have realized the importance of his words, knowing that the whole world—surgical—was lending a "listening ear" to his utterance. The silence was "audible." Then he raised his head, and looking his audience squarely in the face, he said: "Gentlemen, I have felt it my duty to make these statements, for they are true," and took his seat. I shall not attempt to describe the applause nor the effect of his statements. Prof. Keith, by the way, told me privately that he almost died himself from using the carbolic acid so much. He got renal hæmorrhage and debility to an alarming degree.—*Pacific Med. and Surg. Journal*.

Selections.

THE CASE OF PRESIDENT GARFIELD. By FRANK H. HAMILTON, A.M. M.D., LL.D.

Relative positions of the President and the Assassin—Point of entrance of Ball—Course of the Ball—Location of the Ball—Symptoms immediately following the Shooting—Supposed Course of the Ball—Symptoms pointing to right Iliac Fossa as the location of the Ball—Formation of Pouch of Pus in, and Ossification of Main Channel—Incision below twelfth Rib—Irritability of Stomach—Parotitis—Bronchitis and Broncho-Pneumonia—Atmospheric Influences—Removal to Long Branch—Death—Official Report of Autopsy—Additional Facts in relation to Autopsy—The Impracticability of determining the Course of and extracting the Ball—General Principles established in Gun-Shot Wounds of Belly—Application of Lister's Dressings to the President's Wounds—Impropriety of making a Counter-opening in the long Sinus.

In answer to our inquiries, Dr. Hamilton dictated as follows:

So far as I am informed, the testimony is conflicting as to the relative positions of the President and the assassin when the pistol was fired. It is now rendered probable that the assassin stood well to the right and slightly in the rear of the President. The ball entered about four inches to the right of the spine, penetrating and comminuting the eleventh rib, entering the intervertebral substance between the last dorsal and first lumbar vertebræ, and passing obliquely forward, emerged at a point near the center of the first lumbar vertebra in front; and was found some distance to the left of the vertebra at the lower margin of the pancreas—being situated nearer its posterior than its anterior surface—wholly without the peritoneal cavity. It is unnecessary to say that the course of the ball, after penetrating the rib, was not determined until after death. I saw the patient on the morning of July 4, in consultation. We were then informed

of the manner of the accident, and that on the receipt of the injury the President had fallen to the floor, sinking down to the right side; that, being interrogated, he complained of pain in his right ankle, and subsequently, in the course of the day, of a similar pain in his left ankle; which pains had been promptly relieved by the hypodermic injection of morphine. He vomited immediately after the receipt of the injury, and in the course of the day his urine had to be drawn once by the catheter. There was not, when first seen by myself, nor has there been at any time subsequently, any apparent loss of power in his lower extremities, or diminution of the natural sensibility at any point. The pains in his ankles, however, were accompanied with hyperæsthæsia of the integument; and a few days later it was observed that there was hyperæsthesia of the integument of the right side of the scrotum. All of these symptoms—the pain and the hyperæsthesia—disappeared wholly in the course of the first week or two, and never returned. On the morning of the fourth of July, the patient, being partially under the influence of the morphine, was not suffering pain, the bowels were tympanitic, and the pulse was feeble. At the first consultation, the question having arisen as to the probable course of the ball, it was stated that Surgeon-General Wales, of the Navy, had on the day of the receipt of the injury introduced his finger to its full extent, and that he had declared that it penetrated the substance of the liver, the structure of which he recognized by its granular feel; and Dr. Bliss stated that he had introduced a probe about three inches, which seemed to have passed in the same direction. This testimony was regarded sufficient to determine that the ball was at least beyond our reach, and beyond the reach of safe exploration. Dr. Woodward had introduced his finger sufficiently deep into the wound to determine that the rib was broken. Finding upon personal examination and inspection that the track of the wound was completely closed by a firm clot, I refused to make any further exploration. From this time forward great uncertainty existed in the minds of the medical attendants as to the actual course and present situation of the ball. On the 24th of July, and after the complete subsidence of the tympanites, a circumscribed point of induration was discovered in the right

iliac fossa, which at once led to a suspicion that the ball had been deflected, coursing along the anterior surface of the lumbar muscles, and that this induration indicated its present seat. This suspicion was sustained by the hyperæsthesia of the right side of the scrotum, which, as Prof. Weisse had already shown in his anatomical observations, would be the natural result of an injury of the ileo-inguinal or ileo-hypogastric nerves, which lie in the course of the then supposed track of the ball. Still further confirmation was added when, on the 27th of July, we found that a flexible catheter could be carried downward in the direction of the supposed situation of the ball to a distance of seven inches. The point of induration in the right iliac fossa gradually moved downward and became more hard and defined, conveying the impression that it was the ball and that it was encysted. At the autopsy, it having been determined that this was not the ball, further examination of the channel in this direction was not prosecuted. Indeed, this induration had entirely disappeared after death, and it is now presumed that it only indicated the lower end of the long sinus already described.

About this period a small pouch of pus was formed in connection with the main channel, extending underneath the integuments of the back, causing rigors, which were at once relieved by a free incision; and a little later rigors followed in consequence of the temporary obstruction of the channel caused by the floating of a small fragment of the rib into the orifice, which was relieved on the removal of the fragment.

On the 8th of August, great difficulty having been experienced in the introduction of the drainage tube into this long suppurating canal, an incision was made below the twelfth rib, the patient being under the influence of ether. About a week later, the stomach of the President became exceedingly irritable, and it was found necessary to suspend alimentation by the mouth, and for three or four days he was nourished only by enemata. On the fourth day after the suspension of alimentation by the mouth the right parotid gland began to enlarge (Aug. 17), and on Aug. 24 suppurated and was incised; the first incision giving exit only to a few drops of pus. Subsequently it opened into the mouth and meatus auditorius externus, and three or four incisions were

made at different points on the surface for the exit of matter. At the time of death the suppuration and swelling of the parotid gland had almost entirely disappeared.

Following the parotitis there was a gradual development of bronchitis in the right lung; and finally a broncho pneumonia of the lower portion of the right lung, indicated by well defined dullness and a total absence of the respiratory murmur in that region. From this time until the period of his removal from Washington there are no events of striking interest worthy of being related in this brief summary, except the alarming weakness and great somnolency of the patient, which occurred on the 24th, 25th and 26th of August, and which led to an apprehension that a fatal issue was at hand. The patient was evidently suffering from atmospheric influences, the heat being intense and oppressive, and most of the time the air being motionless, so that not a leaf could be seen to stir upon the trees surrounding the White House. There was no evidence, however, at any time, that the patient suffered from malaria having its source in the house drainage or the marshes in the vicinity, and which latter at a later time in the season had always been regarded as pestiferous. His removal to Long Branch occurred on the 6th of September, and was effected without injury or discomfort to the patient, with only a slight amount of fatigue, manifested after his arrival, and from which on the following morning he had completely recovered. There was no day while he lay in the cottage at Long Branch that he did not express himself as pleased and even delighted with the change; nor was he ever oppressed by the heat, although one of the days, the first after his arrival, was the hottest day of the season. At two o'clock in the afternoon of this day, when the heat was greatest, in reply to an inquiry, he said he experienced no discomfort. From this time until the period of his death, which was sudden and unexpected, although in no sense unanticipated, there is no incident worthy of special note—except that there was a gradual change in the last two or three days for the worse. The manner of his death and the result of the subsequent autopsy are sufficiently explained in the official bulletin.

[We here insert the official bulletin.—ED.]

"A post-mortem examination of the body of President Garfield was made eighteen hours after death, in the presence and with the assistance of Drs. Hamilton, Agnew, Bliss, Barnes, Woodward, Reyburn, Andrew H. Smith, of Elberon, and Acting Assistant Surgeon D. S. Lamb, of the Army Medical Museum, Washington. The operation was performed by Dr. Lamb. It was found that the ball, after fracturing the right eleventh rib, had passed through the spinal column in front of the spinal canal, fracturing the body of the first lumbar vertebra, driving a number of small fragments of bone into the adjacent soft parts, and lodging below the pancreas, about two inches and a half to the left of the spine and behind the peritoneum, where it had become completely encysted. The immediate cause of death was secondary hæmorrhage from one of the mesenteric arteries adjoining the track of the ball, the blood rupturing the peritoneum, and nearly a pint escaping into the abdominal cavity. This hæmorrhage is believed to have been the cause of the severe pain in the lower part of the chest complained of just before death. An abscess cavity, six inches by four in dimension, was found in the vicinity of the gall bladder, between the liver and the transverse colon, which were strongly adherent. It did not involve the substance of the liver, and no communication was found between it and the wound. A long suppurating channel extended from the external wound, between the loin muscles and the right kidney, almost to the right groin. This channel, now known to be due to the burrowing of pus from the wound, was supposed during life to have been the track of the ball. On an examination of the organs of the chest evidences of severe bronchitis were found on both sides, with broncho-pneumonia of the lower portions of the right lung, and, though to a much less extent, of the left. The lungs contained no abscesses, and the heart no clots. The liver was enlarged and fatty, but free from abscesses. Nor were any found in any other organ except the left kidney, which contained near its surface a small abscess, about one-third of an inch in diameter. In reviewing the history of the case in connection with the autopsy, it is quite evident that the different suppurating surfaces, and especially the fractured, spongy tissue

of the vertebra, furnish a sufficient explanation of the septic condition which existed.

D. W. BLISS,
J. K. BARNES,
J. J. WOODWARD,
ROBERT REYBURN,
FRANK H. HAMILTON,
D. HAYES AGNEW,
ANDREW H. SMITH,
D. B. LAMB."']

It may be necessary, however, to repeat, inasmuch as contrary statements have been made, that the lungs contained not even the most minute abscess, and that there was no metastatic abscess found in any of the structures examined, except one less than a half inch in diameter near the surface of the left kidney. There were three small serous cysts under the peritoneal covering on the convex edge of the right kidney, each about the size of the vertical section of a large pea. The abscess found between the transverse colon and the liver was evidently not metastatic, but probably was caused by the original injury. There was no cicatrix or wound of the liver, nor anything to indicate that it had suffered injury in the slightest degree.

Since it has been thought by some that it was the duty of the surgeons to have ascertained positively the course and location of the ball, it is proper to consider whether either the one or the other were practicable.

As to determining the course of the ball by a probe, every anatomist will see that it was impossible—if he will consider the very tortuous course which the ball must have taken to reach its final destination; that it passed through the solid structure of the vertebra, and that no metallic instrument sufficiently firm to give indications of the course and direction which it took within the body could ever have reached the ball; nor would any surgeon of experience, familiar with gun-shot wounds in the belly, in the absence of any satisfactory or conclusive evidence as to what course the ball had taken, venture to introduce a probe into the abdominal cavity for the purpose of exploring the supposed rack; nor, indeed, if he had evidence as to the course and situ-

ation of the ball, could he have been justified in such an exploration. No point is better settled in surgery than that interference of this sort in gun-shot wounds of the belly is meddlesome, useless and dangerous; and had it been done, and a fatal peritonitis in consequence been set up, the surgeon doing it would have been justly held responsible for the fatal result.

As to the possibility of the extraction of the ball safely, it would have required a large tegumentary and muscular incision as a means of approach to the spinal column; the actual removal of the whole of the twelfth lumbar vertebra in order to furnish a sufficient channel through which the bold surgeon should advance with his instrument for extraction; and after emerging from the cavity thus made in the spinal column, he would have to penetrate or grope his way cautiously between the ganglionic system of nerves, and arteries, veins, lymphatics, including the thoracic duct, all of which are vital structures almost inextricably joined to each other on the front and sides of the spinal column, and the lesion of any one of which must have proved inevitably fatal.

Throughout the whole course of the treatment, contrary to what has been publicly said repeatedly, so far as it was possible to apply the system of antiseptic surgery advocated by Mr. Lister to a wound of this character, it was rigorously employed.

I am reminded now to say, in reply to some suggestions made from time to time, that we ought to have made a counter-opening in the lower portion of the long sinus which terminated in the right iliac fossa; that there was no period of time during the progress of the case in which we felt absolutely certain that what we recognized in the fossa as a point of induration was the ball; nor were we entirely certain at any time where the lower end of the sinus was actually situated; nothing but a very flexible instrument could ever be introduced, and inasmuch as when introduced, its presence in the track could not be recognized by the sense of touch, we were left without any means of determining, with a sufficient degree of accuracy to justify an operation, where the lower end of the channel was. Indeed, it is probable that the flexible catheter employed never reached the lower end of the channel, but doubled upon itself near the crest of the ileum. To have cut through, or between, the great mass of muscles in

the lower portions of the lumbar regions, for the purpose of making a counter incision into a small channel, the course of which we did not and could not know, even approximately, would have been, under any circumstances, an unjustifiable procedure—and especially so in the case of the President, whose hold upon life during all this long period seemed to depend upon a thread.

ON THE TREATMENT OF THE VARIOUS FORMS OF CONSUMPTION.

BY ROBERTS BARTHOLOW, M.D., LL.D., Professor of Materia Medica and Therapeutics in the Jefferson Medical College, Philadelphia.

I will take it for granted, as is generally believed, that there are three distinct forms of pulmonary consumption: Chronic, catarrhal, or caseous pneumonia, which is an essentially inflammatory disease; chronic tuberculosis, with special direction to the pulmonary parenchyma, which is a diathetic malady, and fibroid phthisis, which is a chronic interstitial pneumonia ingrafted on a chronic bronchitis. It must be obvious that if this classification has a proper basis, it does not suffice to propose a plan of treatment for consumption, but our therapeutical methods must be guided and controlled by the pathological conditions. Whilst this is true, there are certain general principles of treatment applicable to all forms. I propose to consider these first—they are climate and personal hygiene.

In considering the subject of a suitable climate for a pulmonary invalid, I will not go beyond the limits of the United States, within which are contained the utmost variety, and, indeed, the perfection of health resorts for this purpose. In the absence of any statistical data showing the results of prolonged residence in particular localities which might indeed settle the question, we have some general principles to guide us, too little regarded by the profession, but of great value. We owe to Dr. Bowditch, of Boston, the eminent physician and sanitarian, the first principle, which he established for Massachusetts, and which has been confirmed on a larger scale for England. The Bowditch generalization is, that there is a constant ratio between the number of cases

of consumption and the amount of water—rainfall, and collections of water in streams, ponds, and lakes. This principle is not applicable to the ocean, where other conditions obtain. Certain parts of England, having had a large mortality from consumption, present a very different report since suitable drainage works have been put into operation. You need only to cast your eye over the elaborate Atlas of Medical Geography, by Lombard, to see how large a part excess of moisture plays in the geographical distribution of phthisis. All along the sea-coast are traced the deeply shaded lines, whilst in the elevated interior regions, the mortality has disappeared. It is true that density of population and other evil hygienic influences are at work; but excess of moisture is a large factor.

Next to dryness of soil and climate as a remedy for consumption is elevation. The fact stands out as conspicuously in the great Atlas of Medical Geography as the previously considered influence. In the elevated regions—the great plains and plateaus of India, Africa, and America—phthisis is almost unknown (Lombard, vol. iv., p. 420.) Elevation has an important influence in the relief of phthisis, because the air is dry and rarefied. Breathing rarefied air lessens intrathoracic pressure, increases the rate of the respiratory movements and the rapidity of the pulmonary circulation. Residence in a rarefied atmosphere increases the rapidity of the circulation and the amount of blood in the peripheral vessels. The influences of these factors in promoting digestion, assimilation, and tissue metamorphosis are unquestionable. Uniformity is only less important as a requisite for a climate for pulmonary invalids. The reason of this requirement is obvious. Those invalids in a condition to be benefited by outdoor exercise need an equable temperature in which to pursue their sports or recreations with safety. But more important than this is the bad influence of a variable climate in causing attacks of bronchial catarrh, a morbid process so much concerned in the production of caseous phthisis. Applying these principles to the question of a climate for consumptives, I place first on the list the great plains and plateaus of our interior continent, next certain parts of California, then a limited district, of which Aiken, South Carolina, may be regarded as the center, and lastly, the

upper lakes and Minnesota, and the Red River of the North. In the limited space of such a lecture it is quite impossible to go further into details on the subject of climate.

Amongst the questions of personal hygiene alimentation, is the most important. And here, gentlemen, I have some important facts to submit to your consideration. We owe to Hughes Bennett the important practical suggestion that the initial disorders of phthisis are stomachal—that before any pulmonary trouble arises there is a period during which the organs of digestion do poor work, prepare the aliment imperfectly, and hence the nutrition of the body declines. That acute minded physiological surgeon, Mr. Jonathan Hutchinson, has investigated this, as so many other subjects, in a quite original manner, and he finds that almost universally a form of dyspepsia precedes phthisis. In fact it is a matter of common observation, that the individual is out of condition, is losing ground, and this long before the manifestations of pulmonary lesions of any kind. A chronic gastro-intestinal catarrh is present, and one of its special features is that the patient has a positive distaste for the fatty constituents of the food, and that the power to digest fats is much impaired. In a disease characterized by failure of nutrition, and in which the process of repair is so feeble, it is of the utmost importance to maintain the digestion and assimilation at the highest efficiency. There is a general agreement on this point, and hence no sooner is the diagnosis of phthisis arrived at than the injunction of active feeding follows. Without any attempt at correcting the morbid state of the digestive organs, they are plied with the richest hydrocarbons, with a teaspoonful of cod-liver oil before each meal, by way of appetizer, and a tablespoonful or more of whisky after meals as a digester. It results from this method that the appetite is utterly destroyed, and the food, swallowed with disgust, is either rejected or remains to distress. I hope you will always bear in mind that it is not the quantity of food swallowed, but the amount digested and assimilated which is important to the welfare of the individual. The diet, then, should be carefully regulated to the requirements of the individual. Let me now give you a practical hint, on which you will be able to act with great good to your patients. *A period of rest to the*

stomach by a minimum diet will enable the organ to recover from the morbid state, and will induce a great appetite. Acting on this rule, I have repeatedly effected great improvement in the condition of phthisical subjects at the initial period. Put the patient on milk for a week or two, and then gradually construct a suitable dietary. To remove the condition of gastro-intestinal catarrh there are several remedies on which we may rely with confidence. Arsenic stands first, probably, and is to be given in small doses—two drops—three times a day, before meals. Scarcely inferior to arsenic is the combination of iodine and carbolic acid: *Rj. Tinct. iodinii. ʒj. acid. carbol. ʒss. M. Sig.* One or two drops in a tablespoonful of water three times a day, before meals. The oxide and nitrate of silver are also highly serviceable, but unfortunately they cannot be continued long, owing to the danger of argyria. The mineral acids, if the digestion merely flags, or if the previous remedies have been taken for a sufficient time, are very important remedies. I have seen some striking results from the use of the nitro-muriatic acid during the initial stage, but the action of this remedy in changing morbid states of the mucous membrane and in promoting appetite and digestion is the secret of any curative power it possesses. The alkaloid strychnia, dissolved in diluted muriatic acid, makes a useful combination, for strychnia is probably the most effective agent which we possess for arresting the vomiting of phthisis.

If the morbid state of the mucous membrane has been removed, and the appetite restored, then we may consider the question of forcing the nutrition by increasing the performance of the assimilative organs. Now we may give cod-liver oil, and aid its digestion by the administration of malt liquors or alcohol in some form: It should be given after meals, to be digested and assimilated with the other foods. It is a great error to administer the oil, as is so often done, on an empty stomach and some time before the meal, because it will spoil the appetite, and keep the stomach at work during its proper period of repose. Furthermore, the quantity of oil taken should rarely exceed a teaspoonful, for this amount only can the digestive organ properly assimilate at one time. If it impair the appetite and cannot be digested, it is useless, and should not be continued. Bernard has put us in posses-

sion of an important fact, which ought always to be utilized—that is, that ether promotes the digestion of the oil when administered with it. Bernard's notion was that ether increases the flow of the pancreatic juice, and must therefore promote the emulsionizing of the oil. Whether or no the theory be correct, there has been accumulated sufficient testimony to show that the digestion of the oil is much more easily and perfectly accomplished by the addition of some minims of ether.

To what extent is the administration of alcohol desirable and proper in the treatment of phthisis? First of all, we should take our position firmly against a too prevalent notion that whisky is in a certain degree antidotal, and that any case of consumption must be cured if only it is given early enough, and in sufficient quantity. The mischievous fallacy is so far from true, that we now know a form of degeneration of the pulmonary parenchyma is produced by alcoholic excess. Before hectic comes on, as a rule, the extract of malt and malt liquors are preferable to whisky and brandy. When wasting proceeds rapidly, and destruction of the lung tissue is going on at the same pace, when the fever approaches more and more the septicæmic type, the stronger liquors are better, but at any period whisky should be given instead of malt liquors, if it agrees better. Is there any guide to the proper administration of alcohol? I am perfectly clear that these are well-defined principles. That quantity of spirit which increases the appetite, and improves the digestion, is the proper quantity. An excess is hurtful, because the alcohol precipitates the pepsin from its solution in the gastric juice, and therefore suspends the production of peptones. A large quantity taken on an empty stomach is without influence on the digestion of foods, and whilst it affects the mucous membrane injuriously, after absorption acts on the hepatic cells. These reasons seem conclusive in favor of a moderate quantity of alcoholic food—say half an ounce of whisky—taken after each meal.

[CONCLUDED IN JANUARY NUMBER.]

Items.

TUBERCLE: ITS HISTOLOGICAL CHARACTERS, AND ITS RELATION TO THE INFLAMMATORY PROCESS, AS SHOWN IN "TUBERCULOSIS" OF LYMPHATIC GLANDS. By FREDERICK TREVES, F.R.C.S. Read before the International Medical Congress.

The term was here limited to the appearance known as sub-miliary, lymphoid, or primitive tubercle, or tubercular follicle. Tubercle, the author said, represented a certain stage or degree of a peculiar form of inflammation; that developed tubercle was usually chronic, and induced by slight excitation; its exudations were very cellular, and in certain places presented large nuclear-like bodies (Rindfleisch), which might be regarded as almost special to the process; the products resisted absorption, and lingered in the tissues. Non-vascularity of the part was an early feature. Degenerative changes usually ensued, most commonly caseation. If a certain stage of the process were reached, giant-cells appeared, or the so-called tubercle was met with. Above all, this inflammation required for its development the anatomical element of adenoid, or lymphatic tissue. In the tubercle producing process in glands, the first changes are those of simple inflammation. The appearance of giant-cells, or of tubercle proper, indicated a certain stage in the process. The stage might never be reached, and glands, if affected with some intensity, might caseate before any giant-cell or tubercle had been seen. Tubercle occurred in the most chronic or least intense form of the inflammatory process. It represented, in one sense, the highest attainable morbid change. Giant-cells were by no means special to tubercle. They were merely lymph-coagula, and indicated the

cessation of all lymph current. In regard to histology, Mr. Treves said that the fibrous material of glands, the seats of tardy inflammation, tended to arrange itself in roundish districts. If the fibrous matter in these districts were somewhat open, and giant-cells were introduced, the appearance of tubercle might be seen. The reticulum occupying the spot presented no constant appearance, but was modeled precisely upon the arrangement of the fibrous matter in the vicinity. Many of the so-called tubercles had the giant-cell at the periphery, others had no giant-cell, many are oval, or of the most irregular outline. The giant-cell, he urged, was here also merely a lymph-coagulum, that blotted out a certain amount of the reticulum in which it was deposited. As the mass degenerated, the reticulum often came into view, and could be seen to be continuous with the adjacent tissue by means of the giant-cell processes.

OFFICIAL LIST OF CHANGE OF STATIONS AND DUTIES OF MEDICAL OFFICERS of the United States Marine Hospital Service, July 1, 1881, to September 30, 1881:

Bailhache, P. H., Surgeon. Detailed as member of Board to examine keepers and crews of Life Saving Stations. September 3, 1881. To inspect the service of stations in Maine, New Hampshire and Massachusetts. September 9, 1881.

Wyman, Walter, Surgeon. When relieved of special duty as medical officer revenue-bark "Chase," to rejoin his station, *via* Washington, D. C. August 18, 1881.

Long, W. H., Surgeon. Detailed as Chairman Board of Examiners. September 12, 1881. Granted leave of absence for twenty-four days from September 24, 1881.

Purviance, George, Surgeon. Detailed as member Board of Examiners. September 12, 1881.

Sautelle, H. W., Surgeon. Detailed as recorder Board of Examiners. September 12, 1881.

Godfrey, John, Passed Assistant Surgeon. To proceed to Pascagoula, Miss., as inspector. July 27, 1881.

Goldsborough, C. B., Passed Assistant Surgeon. To proceed to Havre de Grace, Md., as inspector. July 27, 1881. Granted leave of absence for thirty days from September 1, 1881.

Cooke, M. P., Assistant Surgeon. Granted leave of absence for thirty days from August 12, 1881.

Carter, H. R., Assistant Surgeon. Granted leave of absence for eight days from September 24, 1881.

SOCIETY MEETINGS.

Chicago Medical Society—Mondays, Dec. 5-19.

West Chicago Medical Society—Mondays, Dec. 12-26.

Biological Society—Wednesday, Dec. 7.

CLINICS.

MONDAY.

Eye and Ear Infirmary—2 p. m., Ophthalmological, by Prof. Holmes; 3 p. m., Otological, by Prof. Jones.

Mercy Hospital—2 p. m., Surgical, by Prof. Andrews.

Woman's Medical College—2 p. m., Dermatological and Venereal, by Prof. Maynard; 3 p. m., Diseases of the Chest, Prof. Ingals.

TUESDAY.

Rush Medical College—3 p. m., Dermatological and Venereal, by Prof. Hyde.

Cook County Hospital—2 to 4 p. m., Medical and Surgical Clinics.

Mercy Hospital—2 p. m., Medical, by Prof. Quine.

WEDNESDAY.

Chicago Medical College—2 p. m., Eye and Ear, by Prof. Jones.

Rush Medical College—2 p. m., Medical, by Dr. Bridge; 3 p. m., Ophthalmological and Otological, by Prof. Holmes; 3:30 to 4:30 p. m., Diseases of the Chest, by Dr. E. Fletcher Ingals.

THURSDAY.

Chicago Medical College—2 p. m., Gynæcological, by Prof. Jenks.

Rush Medical College—2 p. m., Diseases of Children, by Dr. Knox; 3 p. m., Diseases of the Nervous System, by Prof. Lyman.

Eye and Ear Infirmary—2 p. m., Ophthalmological, by Dr. Hotz.

Woman's Medical College—3 p. m., Surgical, by Prof. Owens.

FRIDAY.

Cook County Hospital—2 to 4 p. m., Medical and Surgical Clinics.

Mercy Hospital—2 p. m., Medical, by Prof. Davis.

SATURDAY.

Rush Medical College—2 p. m., Surgical, by Prof. Gunn; 3 p. m., Orthopædic, by Prof. Owens.

Chicago Medical College—2 p. m., Surgical, by Prof. Isham; 3 p. m., Neurological, by Prof. Jewell.

Woman's Medical College—11 a. m., Ophthalmological, by Prof. Montgomery; 2 p. m., Gynæcological, by Prof. Fitch.

Daily Clinics, from 2 to 4 p. m., at the Central Free Dispensary, and at the South Side Dispensary.

